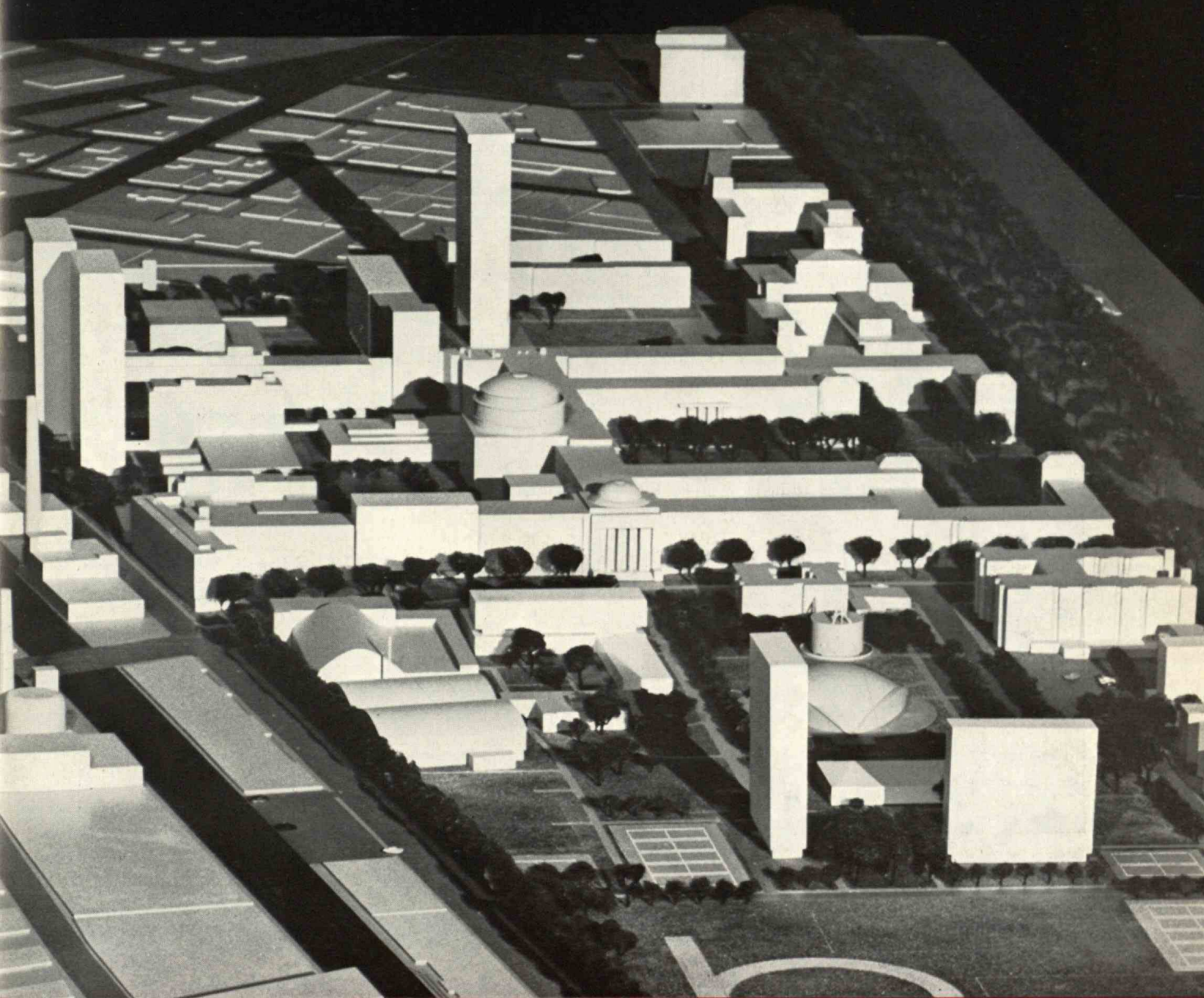


Technology Review

June 1960

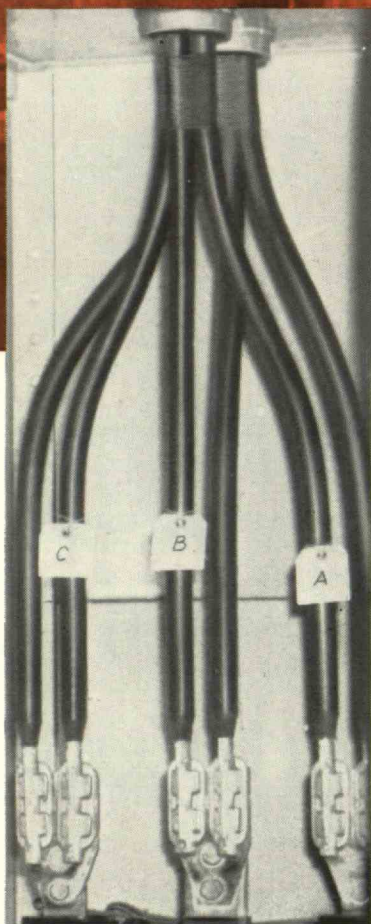
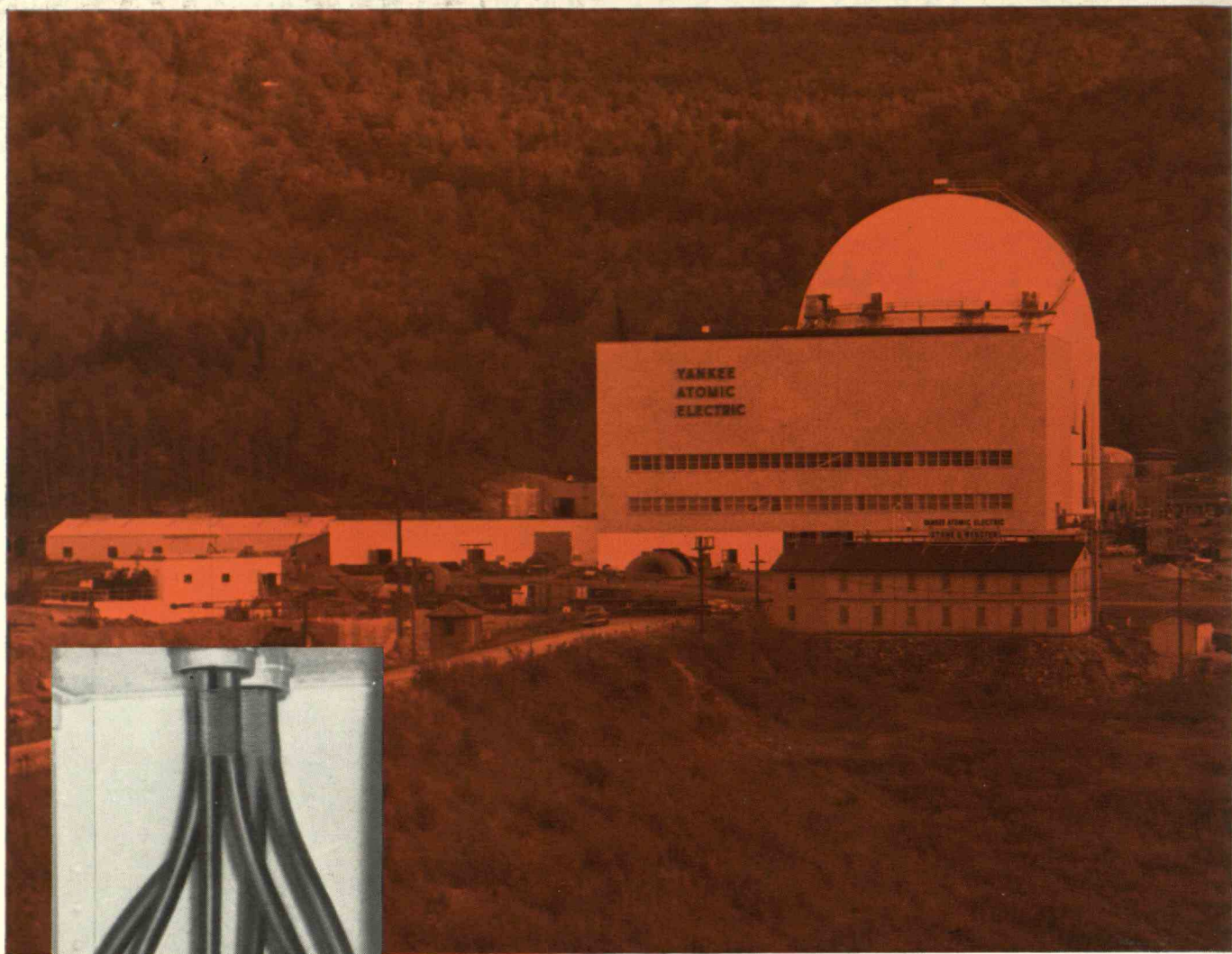


From strength to greater strength...

technology review

Published by MIT

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ARTERIES FOR THE POWER OF THE ATOM

In Rowe, Massachusetts, the Yankee Atomic Electric Company has built one of the first commercial atomic power plants in the U. S.

This engineering marvel, designed to transform the destructive power of the atom into useful electrical energy, utilizes no less than 200,000 feet of Simplex wire and cable, some of which is exposed to radiation.

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















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what's your best estimate?

... a quiz for refinery men who want to keep posted

QUESTION 1. In these countries in the sterling area—England, Scotland, Ireland and India—how many new oil refineries have been built since the close of World War II?

- a     _____ 4
- b       _____ 6
- c         _____ 8
- d              _____ 12

QUESTION 2. How many of these refineries have been designed, engineered and constructed by Lummus?

- a    _____ 3
- b      _____ 5
- c        _____ 7
- d           _____ 9

2. Here (b) is correct. Lummus has built 5, or 42%, of the new refineries in these countries since World War II, through the Lummus Company Ltd. of London. These five refineries are for Vacuum Oil Company Limited at Coryton, England; California Texas Oil Corporation at Visakhapatnam, India; Burmah-Shell Refineries, Ltd. at Bombay, India; Standard-Vacuum Oil Company, Ltd. at Bombay, India; and the Irish Refining Company, Ltd. at Whitegate, Ireland. Lummus Ltd. maintains a staff of over 400 specialists, and has engineered and constructed hundreds of process plants of all types and sizes in the sterling area from India to Ireland. Lummus Ltd. is one of seven international members of the Lummus group of companies which circles the globe. See Lummus on your next project.

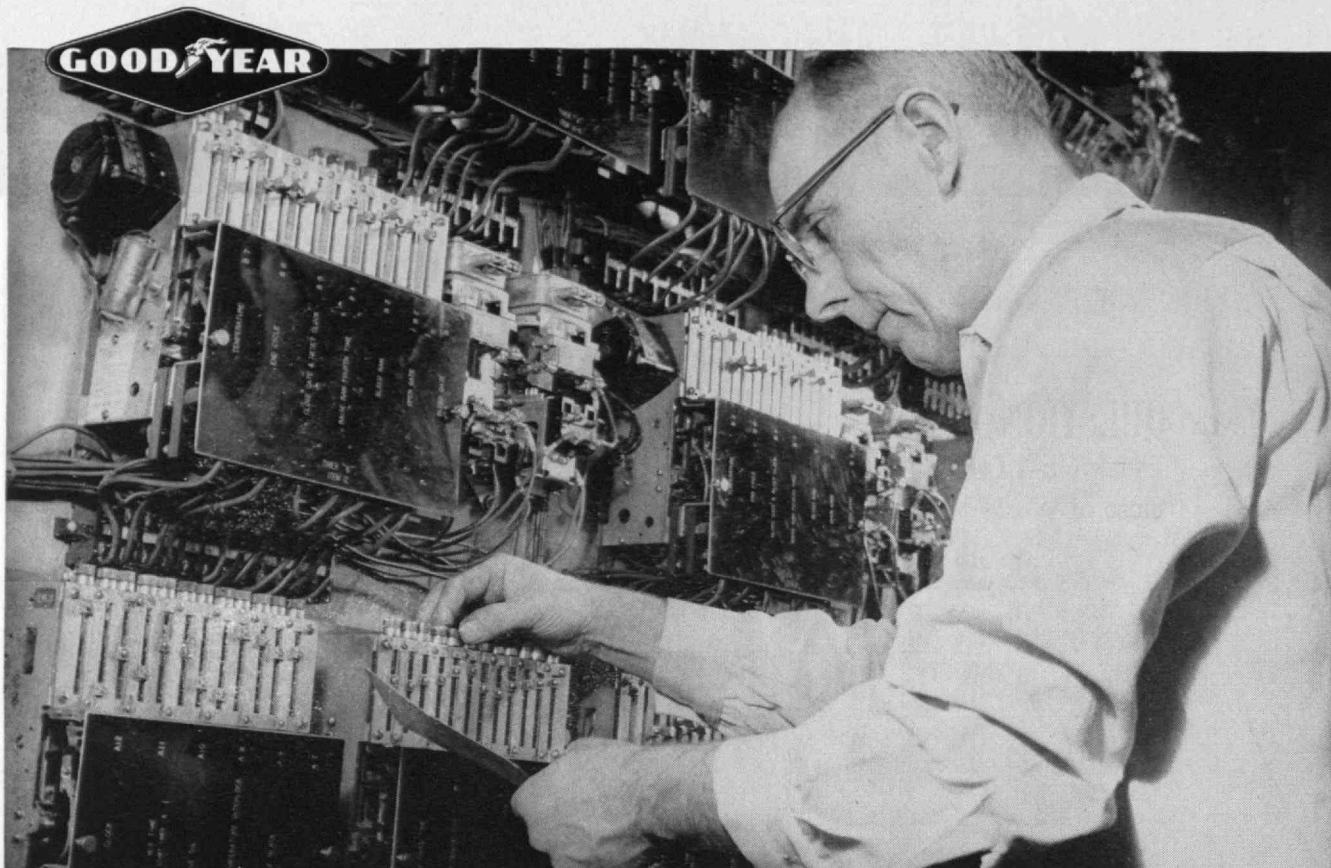
ANSWERS: 1. The answer is (d)—12 new refineries since the war, according to World Petroleum magazine.



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—part of a vast control system that guides with precision the mixing of Goodyear's special tread rubber compound.

Now **PRECISION-BUILT** with **ELECTRONIC CONTROLS** ...the world's first **TURNPIKE-PROVED TIRES**

Now electronic quality control—a new way of precision-building a tire—has been added to the superior materials Goodyear puts into a tire. What it means is this:

1. Up to 25% more safe mileage than before. Mixing of Goodyear's super-tough tread compound is controlled by electronics. The other major reason for Turnpike-Proved mileage—triple-tempered 3-T Cord (Rayon or Nylon)—is built into tires with the control of electronics.
2. New whisper-quiet, cushion-soft ride. New chemicals permit us to soften

the tread of our tires *without sacrificing mileage*. Because we have rubber that's softer, yet tougher, Goodyear tires now give you up to 25% more safe mileage than before.

3. New 3-way sureness on the road. Quicker starts—safer stops—better car control on turns. Again, this Goodyear advance comes not only from design factors, but also from the precision quality we get from *electronic controls*.

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Technology Review

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Volume 62, Number 8

Edited at the Massachusetts Institute of Technology

June, 1960



Feedback

Please Note in 1985

FROM EDWARD R. ATKINSON, '33:

It is unfortunate that after 25 years an error in reporting made in the March, 1935, *Review* should be repeated (*Technology Review*, March, 1960, page 60). I call this to your attention in the hope that the March 1985 issue will not repeat it once more.

The last sentence of the note describing the asymmetric synthesis of Davis and Heggie which reads, "The experiments support the belief that plants accomplish their asymmetric synthesis by reason of the polarized light in which they live" was in error, and I suspect that Professor Davis may have called this to your attention in 1935.

Plants accomplish their asymmetric synthesis under the control of enzyme systems which are already optically active and rely in no sense on the presence of polarized light. What your original reporter intended to say was that the action of polarized light may have been responsible for the first occurrence on earth of an optically active system of matter.
Cambridge, Mass.

Always Welcome News

FROM CHARLES D. AXELROD, '48:

The quality of *The Technology Review* is too good to allow it to pass without comment. I find much of interest in each

CAPACITORS now mark the site of the new M.I.T.-Harvard accelerator. This 6 billion-electron-volt machine is described and pictured in the article on page 27 this month.

issue, and have come to anticipate its arrival with pleasure.

Any objective appraisal of magazines of its type would surely rank it among the leaders, and its staff is to be praised for its accomplishments.
Cincinnati, Ohio

EDITOR: Volta Torrey; BUSINESS MANAGER: R. T. Jope, '28; CIRCULATION MANAGER: D. P. Severance, '38; EDITORIAL ASSOCIATES: J. J. Rowlands, Francis E. Wylie, John I. Mattill; EDITORIAL STAFF: Ruth King, Diana de Filippi, Norma G. Humphries; BUSINESS STAFF: Madeline R. McCormick, Louise E. Ryan; PUBLISHER: H. E. Lobdell, '17.

The *Technology Review* is published monthly from November to July inclusive, on the 27th day of the month preceding the date of issue, by the Alumni Association of M.I.T.; Edward J. Hanley, '24, President; H. E. Lobdell, '17, Executive Vice-president; William W. Garth, Jr., '36, William L. Taggart, Jr., '27, Vice-presidents; Donald P. Severance, '38, Secretary-Treasurer.

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This Month

The Cover

The photograph is of a model of M.I.T. in the future as envisaged on the eve of its centennial. On page 13 you will find another view of the model, and a map showing locations of proposed buildings.

Individuals Noteworthy 4

Next year's officers of the Alumni Association are elected and Faculty promotions announced.

The Trend of Affairs 13

A Second Century Fund of 66 million dollars is announced to enable the Institute to meet its increasing responsibilities to the nation.

Photos of New Professors 16

Talk of Our Times 20

Dr. Igor Sikorsky foresees a role for helicopters in a jet age.

Aspects of Space Research 21

Dr. Vannevar Bush, '16, questions some of the current proposals.

The Compton Lecture Series 23

Dr. André Lwoff cites opportunities for physicists in biology.

Logic in Scientific Writing 24

The editor of *Food Research* discusses an essential ingredient.

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A pictorial report on a gigantic facility shared with Harvard.

How to Study Mars 30

An M.I.T. group proposes a recoverable, photographic device.

When You Judge Architecture 31

Excerpts from a new book by a former Visiting Professor at M.I.T.

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The students' model railroad has been having a good year.

Books 42

Reviews of Prof. Walt W. Rostow's work and another PSSC monograph.

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Items that were news at M.I.T. 25, 50, 75, and 92 years ago.

Individuals Noteworthy

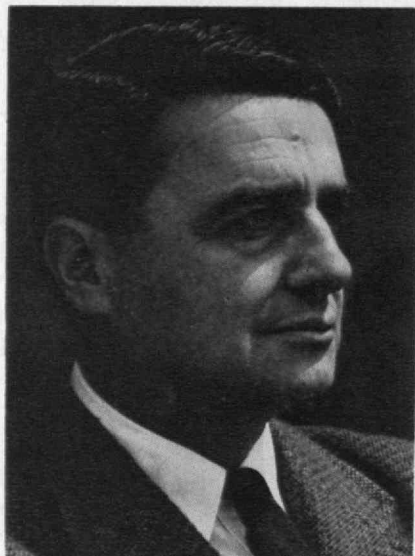


Photo by Ansel Adams

The commencement speaker at the Institute this year will be Edwin H. Land, the Polaroid Corporation's President. The ceremony will be at 10:30 A.M. on Friday, June 10.

Faculty Promotions

THE EXECUTIVE Committee of the M.I.T. Corporation authorized the promotion this spring of 16 men—they are pictured on page 16 of this issue—to the rank of Professor, and the following to the rank of Associate Professor:

Edward W. Merrill, '47, Chemical Engineering;

F. Albert Cotton, Chemistry;

Frederick J. McGarry, '50, Civil Engineering;

Francis M. Bator, '49, *Davis H. Howes*, 3d, and *John A. Swets*, Economics;

Dean N. Arden, *Marcy Eager*, *Leonard A. Gould*, '48, *Alan L. McWhorter*, '55, *Campbell L. Searle*, '51, and *John M. Wozen-craft*, '51, Electrical Engineering;

Arthur J. Boucot and *William H. Pinson, Jr.*, '52, Geology;

Robert E. MacMaster and *Har-ald A. T. O. Reiche*, Humanities;

Stanley M. Jacks and *Edgar H. Schein*, Industrial Management;

George E. Backus, *Henry P. McKean, Jr.*, and *Daniel B. Ray*, Mathematics;

Peter Griffith, '56, and *Henry M. Paynter, Jr.*, '44, Mechanical Engineering;

Robert E. Ogilvie, '52, Metal-lurgy;

George W. Clark, '52, and *George F. Koster*, '48, Physics.

The Election Results

AS ITS President for 1960–1961, the M.I.T. Alumni Association has elected *Clarence L. A. Wynd*, '27; as Vice-president for two years, *Thomas F. Creamer*, '40; and as members of the Executive Commit-tee for two-year terms, *Randolph Antonsen*, '35, and *John L. Dan-forth*, '40.

Bennett Archambault, '32, *Rob-ert H. Winters*, '33, and *Semon E. Knudsen*, '36, were chosen as Alumni Term Members of the Cor-poration, in the balloting which ended April 25.

On the National Nominating Committee, *William H. Barker*, '32, will represent District 3; *William R. Ahrendt*, '41, District 6; and *Robert C. Meissner*, '43, District 7.

Warren G. Briggs was chosen to represent the Class of 1956, on the Alumni Council, and the following were re-elected for five-year terms: *James M. Driscoll*, '96, *Willard W. Dow*, '01, *Edward B. Rowe*, '06, *Emmons J. Whitcomb*, '11, *Joseph W. Barker*, '16, *Henry R. Kurth*, '21, *Chenery Salmon*, '26, *Edward B. Hubbard*, '31, *William W. Garth, Jr.*, '36, *D. Reid Weedon, Jr.*, '41, *Donald A. Hurter*, '46, and *Charles H. Spaulding*, '51.

New Posts

NAMED in the news recently were the Alumni whose elections, promo-tions, and appointments are re-corded below:

—*William C. Lynch*, '12, as Chair-man of the Board, Prophylactic Brush Company . . . *Valentine Friedrich, Jr.*, '22, as Division Manager, Watervliet Paper Co., Watervliet, Mich. . . . *Sargent D. Heath*, '24, as Treasurer, The

Washburn Company, Worcester, Mass.;

Edward A. Saibel, '24, as Chair-man, Department of Mechanics, Rensselaer Polytechnic Institute . . . *Max Levine*, '25, as President, Furniture and Bedding Spring In-stitute . . . *William P. Lowell, Jr.*, '26, as Manager, Technical Liaison, Sylvania Lighting Products, divi-sion of Sylvania Electric Products, Inc.;

Walter F. Burke, '29, as Vice-president, McDonnell Aircraft Cor-poration . . . *Daniel J. O'Connell*, '29, as a Trustee, American Inter-national College;

Lombard Squires, '31, *Charles B. McCoy*, '32, and *Carl S. Oldach*, '41, respectively, as Manager, Atomic Energy Division, Explo-sives Department; as General Man-ager, Explosives Department; and as Assistant General Manager, Or-ganic Chemicals Department, E. I. du Pont de Nemours and Company, Inc.;

Alexander J. Minkus, '33, as Chairman, New England section, American Water Works Association . . . *Ernest J. A. Greenwood, Jr.*, '34, and *Edward R. Harris*, '40, re-spectively, as Operations Manager and as Assistant Chief Engineer, Norden Division, United Aircraft Corporation;

Walter K. MacAdam, '36, as Vice-president, American Tele-phone and Telegraph Company . . . *Webster H. Wilson*, '36, as Presi-dent, Hazeltine Corporation, Little Neck, N. Y. . . . *Robert E. Benson*, '37, as Vice-president, Equitable Life Assurance Society;

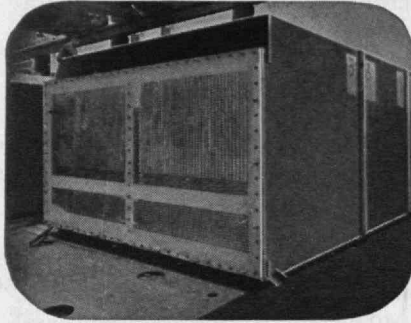
Frank A. Knight, '38, as Division Manager, Eastern Fine Paper and Pulp Division, Standard Packaging Corporation . . . *Howard H. Reyn-olds*, '39, as Director of Research, Ludlow Papers, division of Ludlow Manufacturing and Sales Company . . . *Willis H. Yocom*, '42, as Man-ager, Wave Tube Development, Varian Associates, Palo Alto, Calif.;

A. Donald Arsem, '44, as Vice-president, Wurlitzer Company . . . *Roland Benjamin, Jr.*, '44, as Vice-president, Smyth and Murphy As-sociates, New York City . . . *Nor-man L. Greenman*, '44, as Vice-president, Marketing, Rogers Cor-poration;

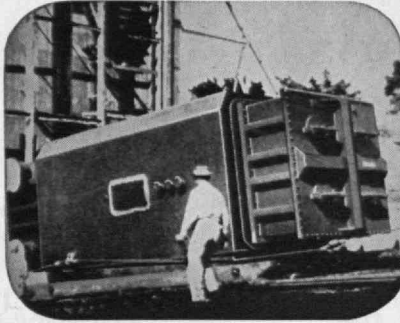
Russell W. Sloan, '47, as Man-ager, Marketing Planning Depart-

(Continued on page 6)

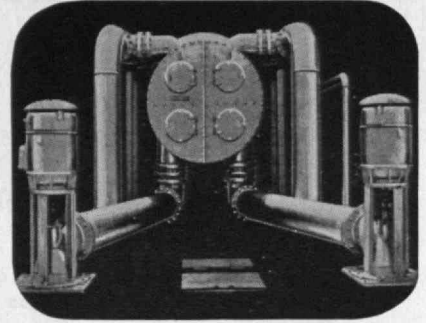
HOW C.H. WHEELER CONDENSER DESIGN saves space...



Head Room problems are solved by compact condensers like this one. Turbine floor to basement floor, in this case, is only 20 ft. The Unit has 65,000 square feet of condensing surface.

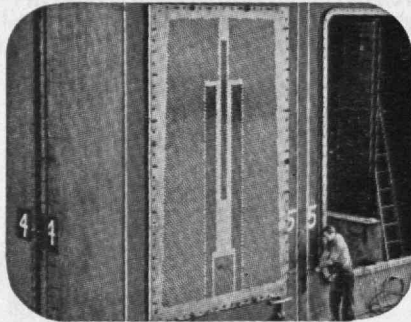


Rectangular Cross Section makes C.H. Wheeler Condensers adaptable to nearly any space or condenser arrangement because the length, width and height of any Wheeler Unit can be varied almost at will.

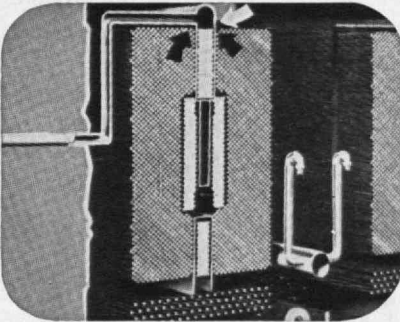


But Wheeler Doesn't limit itself to rectangular design. A round cross section worked out better here, for example, at the first planned gas-steam turbine station ever designed and built in United States.

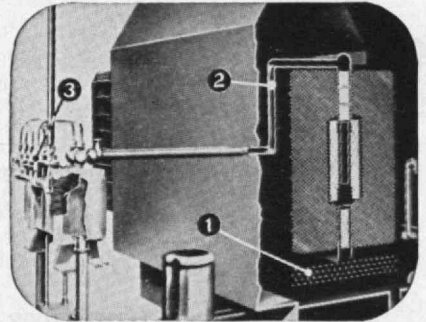
improves power generating efficiencies...



Triple Lane tube layout, another design feature, provides 3 pathways for steam travel, utilizes maximum cooling surface and produces higher condenser vacuums for power generating stations.

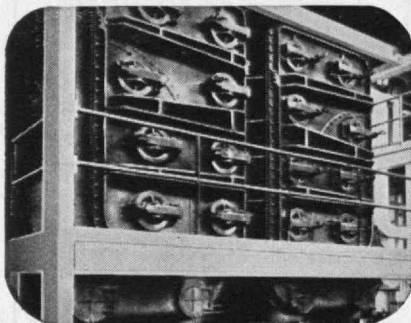


Location of air-vapor takeoff speeds steam travel and allows steam to penetrate to the peripheries of all tubes. It thus improves condenser efficiencies and overall power station operation as well.

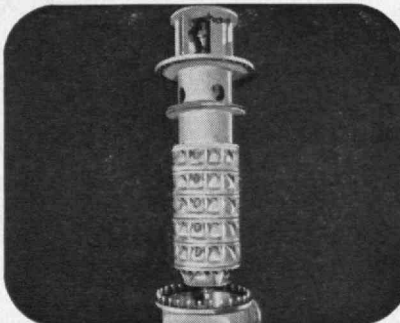


Deaeration of condensate not to exceed 0.01 cc. oxygen/liter is available with special Wheeler designs. Note the Deaerating Bars (1), the Air-Vapor Suction Line (2), and Tubejet® Ejectors (3).

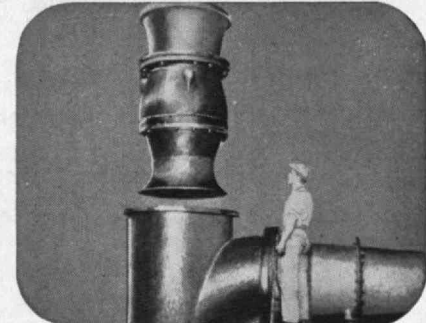
and reduces maintenance



Patented Reverse Flow permits flushing tubes and sheets without shutting down Unit, during full load with either or both circulating pumps operating. No additional circulating water inlet or discharge piping necessary with C.H. Wheeler's Reverse Flow.



"Pull-Out" Condensate Pumps simplify maintenance because entire pumping element, including all rotating parts, can be removed without disturbing either the pump barrel or the piping connections.



C. H. Wheeler Circulating Pumps, like Condensate Pumps, are easy to inspect and maintain because of "Pull-Out" design. In addition, shafts are heat treated alloy steel and impellers are statically and dynamically balanced for trouble-free operation.

C. H. Wheeler has been designing and building condensers since 1903; has developed such features as Dual Bank Design and Reverse Flow.

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Whenever you see the name C. H. Wheeler on a product, you know it's a quality product

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Individuals Noteworthy

(Continued from page 4)

ment, Pennsalt Chemicals Corporation . . . *Lt. Commander Albert J. Kelley, USN, '48*, as Agena Vehicle Program Manager, National Aeronautics and Space Administration . . . *Martin Lessen, '48*, as Chairman of the Department of Mechanical Engineering, University of Rochester;

William H. Enders, '50, as Manager, Market Research & Analysis, Missile Electronics & Controls Division, Defense Electronic Products, Radio Corporation of America, Burlington, Mass. . . . *Morton B. Prince, '51*, as Vice-president and General Manager, Semiconductor Division, Hoffman Electronics Corporation.

Honors

MEDALISTS and recent recipients of other distinctions include:

Robert B. Sosman, '04, and *Stanley D. Stookey, '40*, respectively, the John Jeppson Medal, in recognition

(Continued on page 10)

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In today's military and commercial projects, you can't afford to overlook any one of these important areas: Reliability, Size, Availability, Economy.

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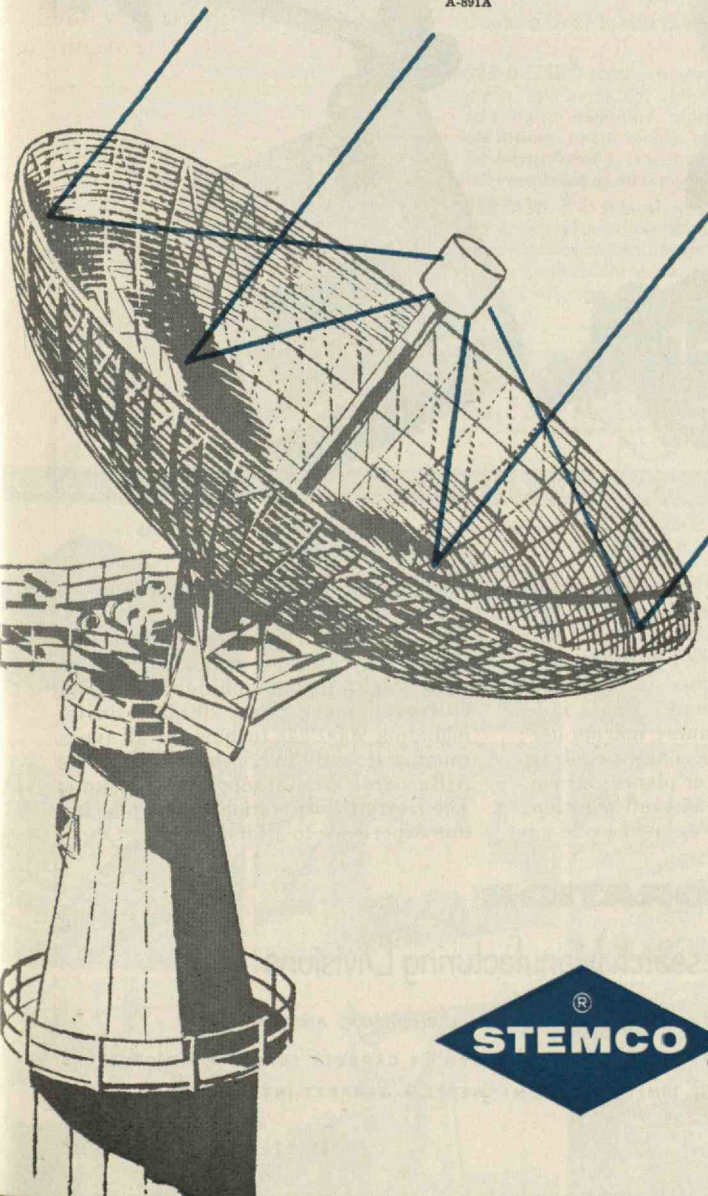
1st in Reliability. Proven designs, latest production techniques, most stringent inspection procedures.

1st in Size. Stemco thermostats score in compactness and lightness without sacrificing performance.

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1st in Economy. Mass production of many standard Stemco types with hundreds of terminal arrangements and mounting brackets cuts your costs.

*Refer to Guide 400EO for U.L. and C.S.A. approved ratings.
A-891A



TYPE A* semi-enclosed. Bimetal disc type snap action thermostats; give fast response to temperature changes. Can be made to open on rise or close on rise. Single-throw with double make and break contacts. Operation from -20 to 300°F . Lower or higher temperatures on special order. Average non-inductive rating 13.3 amps, 120 VAC; 4 amps, 230 VAC and 28 VDC. Various mountings and terminals available. Bulletin 3000.

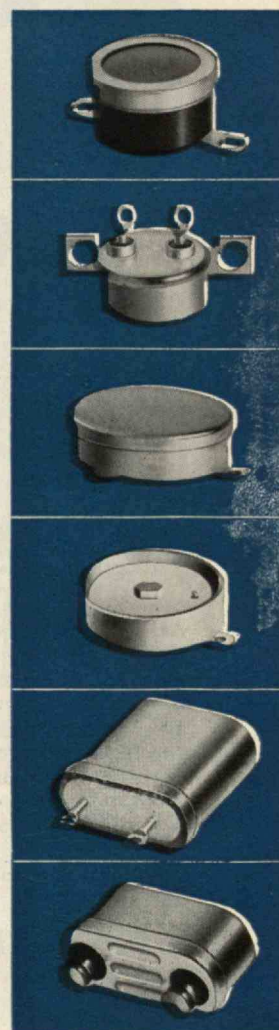
TYPE A hermetically sealed. Electrically similar to semi-enclosed Type A. Various mountings, including brackets, available. Bulletin 3000.

TYPE MX hermetically sealed. Snap acting bimetal disc type units to open on temperature rise. 2 to 6°F differentials as standard. 1 to 4°F differentials available on special order. Depending on duty cycle, normal rating 3 amps, 115 VAC and 28 VDC for 250,000 cycles. Various terminals, mountings and brackets available. Bulletin 6100.

TYPE MX semi-enclosed. Construction and rating similar to MX hermetically sealed type. Bulletin 6100.

TYPE M hermetically sealed. Bimetal disc type, snap acting thermostats. Also available in semi-enclosed. Operation from -20 to 300°F . Lower and higher temperatures available on special order. Depending on application, rated non-inductive 10 amps, 120 VAC; 3 amps, 28 VDC. Various terminals, wire leads and brackets available. Bulletin 6000.

TYPE C hermetically sealed. Also semi-enclosed styles. Small, positive acting with electrically independent bimetal strip for operation from -10 to 300°F . Rated at approximately 3 amps, depending on application. Hermetically sealed type can be furnished as double thermostat "alarm" type. Various terminals and mountings. Bulletin 5000.

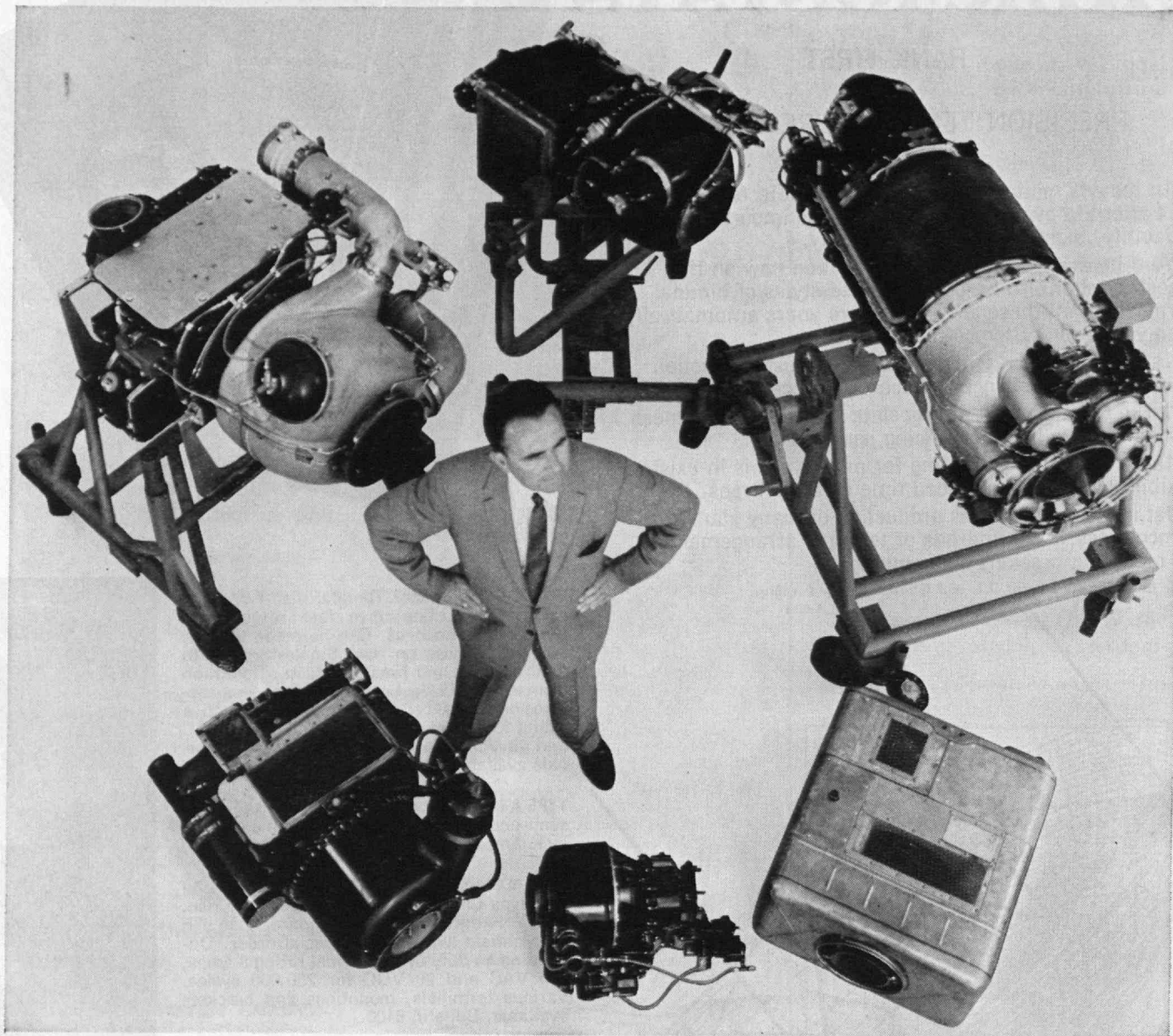


THERMOSTATS

STEVENS manufacturing company, inc.

P.O. Box 1007C, Mansfield, Ohio

Auxiliary Gas Turbines becoming a prime power source for industry



Helmut Schelp, chief engineer, AiResearch Manufacturing Division of Arizona, Phoenix, surrounded by typical gas turbines now in production

-ranging in size from 30 to 850 hp. Clockwise from the top: GTC 85-28 GTCP 105 • GTP 70-6 • GTP 30-1 • GTP 70-10 • GTU 85-2.

AiResearch Gas Turbine Engines, the most widely used power source for the starting, air conditioning, cooling and heating of jet aircraft, now are becoming a prime power source for industry.

Easier to maintain because of few moving parts, these lightweight gas turbine engines develop more horsepower per pound of weight and size than any other engine. Achieving their greatest efficiency

at maximum speeds, they run on almost any fuel and start immediately in any weather.

Future prime power applications of AiResearch gas turbines for industry: earthmoving equipment; small independent generator plants; marine use; helicopters and small conventional aircraft; emergency power plants; air conditioning, heating and refrigeration; atomic energy (closed cycle gas

turbine with atomic energy heat source).

First to design and develop a successful small gas turbine engine, Garrett is the world's largest manufacturer of lightweight turbomachinery — having delivered more than 200,000 units, including 9000 gas turbines of all types ranging from 30 to 850 hp. Through its AiResearch Manufacturing Divisions, The Garrett Corporation is now offering this experience to all industry.

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Two Miles of Hopper Cars add up to Better Service

Cabot's fleet of special hopper cars for delivering carbon black totals 221 — cars enough to make up a train over 2 miles long, with a capacity of 17 million pounds.

It's the largest fleet of its kind on rails — and it is maintained for a single reason: it provides Cabot customers with the fastest, most dependable service available.

Even if you're not in the market for 17 million pounds of carbon black at the moment, the point is worth remembering as an excellent example of the emphasis Cabot puts on delivering quality in quantity. From Cabot, you get quality in quantity whether you're buying carbon black, or any of a host of chemicals for industry ranging from paint pigments to insecticide raw materials.

Could one of these quality Cabot materials help one of your products?

CAB-O-LITE® (Wollastonite) — as a paint pigment, this versatile, uniform calcium silicate has more desirable properties than other extenders used singly or in combination. Excellent for all types of paint, and for quality improvement of all types of ceramics.

CAB-O-SIL® — this unique airborne silica, in extremely small quantities, greatly improves an enormous variety of products. Remarkable for its unusual combination of properties, it's equally effective as a thixotropic, thickening,

gelling, suspending, flattening, reinforcing, anticaking, and antislip agent. Used in plastics, lubricating oils, greases, paints, varnishes, lacquers, rubber, sulfur, insecticides, pharmaceuticals, cosmetics, and many other products.

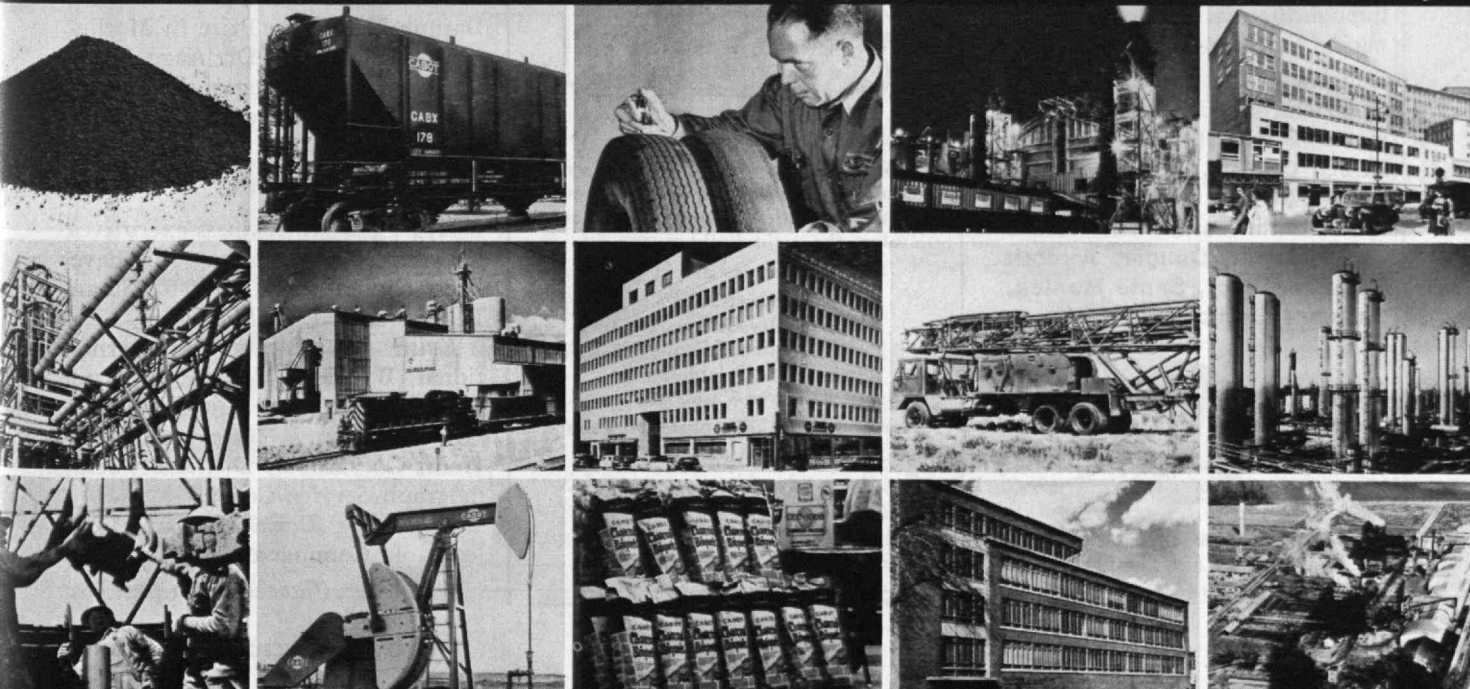
PT® PINE TAR PRODUCTS — these versatile quality-controlled materials improve the performance of a wide variety of products, including: rubber, paint, cordage, oakum and insecticides.

For complete information, phone or write:



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Cabot — an internationally known producer of chemicals for industry.



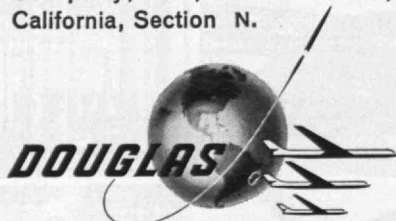


Donald W. Douglas, Jr., President of Douglas, discusses valve and fuel flow requirements for space vehicles with Dr. Henry Ponsford, Chief, Structures Section.

Spaceliners have the biggest thirst in the universe

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MISSILE AND SPACE SYSTEMS ■ MILITARY AIRCRAFT
DC-8 JETLINERS ■ CARGO TRANSPORTS
AIRCRAFT ■ GROUND SUPPORT EQUIPMENT

Individuals Noteworthy

(Continued from page 6)

tion of scientific, technical, or engineering achievements in the ceramic field, and the Ross Coffin Purdy Award, for the most valuable contribution to ceramic technical literature, by The American Ceramic Society;

Carl S. Ell, '11, a Citation for "eminent attainment in the field of co-operative education," by Northeastern University . . . *Alfred J. Ferretti*, '17, *Emil A. Gramstorff*, '17, and *Frederick A. Stearns*, '17, Citations for distinguished teaching, by Northeastern University;

The late *Bernard E. Proctor*, '23, posthumous "award of appreciation," by the U.S. Army Quartermaster Corps . . . *Robert R. Peatfield*, '28, the grade of Fellow, by the American Institute of Electrical Engineers;

Harold T. Smyth, '36, *Alexis G. Pincus*, '40, *William J. Knapp*, '42, *Willis G. Lawrence*, '42, and *James F. Wygant*, '51, the grade of Fellow, by The American Ceramic Society;

Leo B. Moore, '37, the 1960 Gilbreth Medal, by the Society for Advancement of Management . . . *Anthony T. Zaia*, '53, named the "Outstanding Young Architect in Washington, D.C.," for his work on the new Central Intelligence Agency building.



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In National Academy

TWO M.I.T. scientists, Drs. Jerome B. Wiesner and Salvador E. Luria, were elected to the National Academy of Sciences this year.

Dr. Wiesner now directs the Research Laboratory of Electronics and is Acting Head of the Department of Electrical Engineering. Dr. Luria, an international authority on viruses and genetics, is professor of microbiology.

Guggenheim Fellows

RECIPIENTS of fellowship awards from the John Simon Guggenheim Memorial Foundation for 1960 included several members of the M.I.T. Faculty: *William Francis Brace*, '46, Assistant Professor of Geology; *Martin Deutsch*, '37, Professor of Physics; *Morris Halle*, Associate Professor of Modern Languages; *Gyorgy Kepes*, Professor of Visual Design; *Chia-Chiao Lin*, Professor of Mathematics; *Hartley Rogers, Jr.*, Associate Professor of Mathematics; and *Herbert Henry Uhlig*, '32, Professor of Metallurgy.

Faculty Activities

PROFESSOR of Mathematics, *George B. Thomas, Jr.*, was the first E. E. Lafaye Memorial Lecturer at Loyola University in April . . . *Theodore Davidge Lockwood*, Assistant Professor of History, will become Associate Dean of the Faculty and Professor of History at Concord College in Athens, W.Va., in July . . . *Victor F. Weisskopf*, Professor of Physics, presented the Dannie Heineman Prize in Mathematical Physics to Dr. Aage Bohr, at the spring meeting of the American Physical Society in New York.

New Sloan Fellows

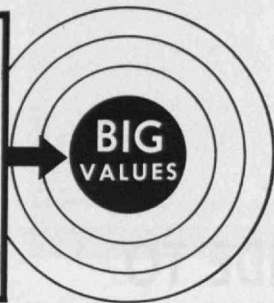
FORTY-FOUR business executives between 30 and 39 years old have been chosen to be 1960-61 Sloan Fellows at M.I.T. They are:

Keith B. Bennett, International Business Machines Corp.; *Jimmie R. Bowden*, Continental Oil Co.; *John B. Carnahan*, H. J. Heinz Co.; *Robert D. Clarke*, Seismograph Service Corp.;

Nanabhoy Davar, Davar's College of Commerce; *William E.*

(Concluded on page 36)

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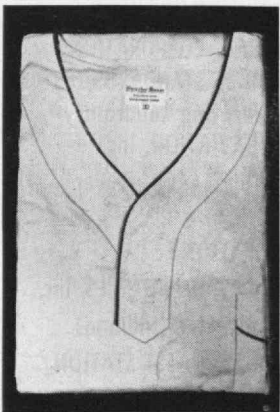
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Edited by Y. S. Touloukian

Thermophysical Properties Research Center
Purdue University

Ten thousand scientific and technical research papers have been coded as to property, substance, subject, language, physical state, etc., and the information stored on magnetic tapes of a computer at Purdue University. The thermophysical properties of 14,500 substances are reported. This work represents the print out of a special computer program and will provide the engineer, scientist, or reference librarian with quick access to the world literature on the following seven thermophysical properties: thermal conductivity, thermal diffusivity, diffusion coefficient, specific heat, viscosity, emissivity and Prandtl number.

Thermophysical
Properties
Research
Center

28
Founder
Sponsors

The Thermophysical Properties Research Center of Purdue University has been in operation since January, 1957. Its activities include the search of the world literature on thermophysical properties and the preparation of tables of "most probable values" for these properties. The work of this highly specialized Center has been made possible through the sponsorship of the following twenty-eight major organizations:

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AMERICAN MACHINE AND FOUNDRY
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APPLIED PHYSICS LABORATORY
AVCO CORPORATION
BABCOCK AND WILCOX COMPANY
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GENERAL MOTORS CORPORATION, Harrison
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THE MARTIN COMPANY
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NATIONAL BUREAU OF STANDARDS,
Cryogenic Engineering Laboratory
NORTH AMERICAN AVIATION, Inc.
OFFICE OF NAVAL RESEARCH, Power
Branch
THE RAND CORPORATION
SPACE TECHNOLOGY LABORATORIES, Inc.
STANDARD OIL COMPANY (Indiana)
U. S. NAVAL ORDNANCE TEST STATION
WESTINGHOUSE ELECTRIC CORPORATION

VOLUME 1

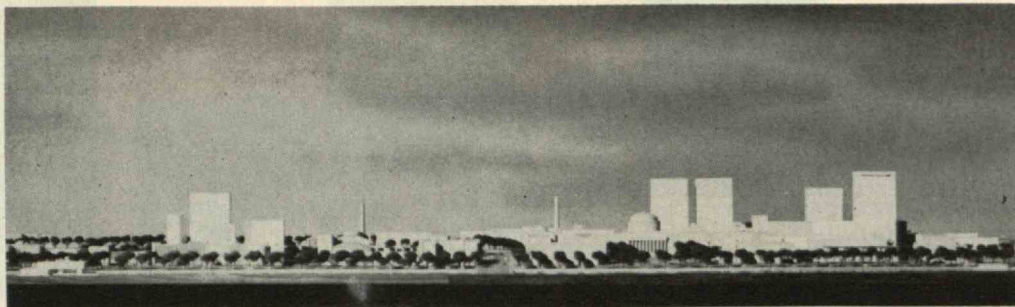
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The Second Century Fund

TO FULFILL its national responsibilities, the Massachusetts Institute of Technology publicly announced an appeal last month for a "Second Century Fund" of 66 million dollars. More than 27 million dollars already has been given, and the campaign for the remainder will reach its climax next year during the celebration of the Institute's centennial. Alumni, industry, foundations, parents, and friends are being asked to contribute.

James R. Killian, Jr., '26, Chairman of the Corporation, and Julius A. Stratton, '23, President, announced this program to advance "from strength to greater strength" after a long and searching inventory of M.I.T.'s resources for future effectiveness. Alfred P. Sloan, Jr., '95, is the honorary chairman of the Second Century Fund. John J. Wilson, '29, 65th President of the Alumni Association and Secretary of the Corporation, is the Fund's general chairman.

The sum to be raised is one of the largest ever sought by a university. It will be used to construct six new buildings and, more importantly, Dr. Killian said, in bold measures to adapt education and research to the demands of a new era. All five of the Institute's Schools, and five new centers for graduate study and research, will be beneficiaries of the fund. It also includes provisions for strengthening the residential system,

support of basic research, funded professorships, and increases in resources for student aid.

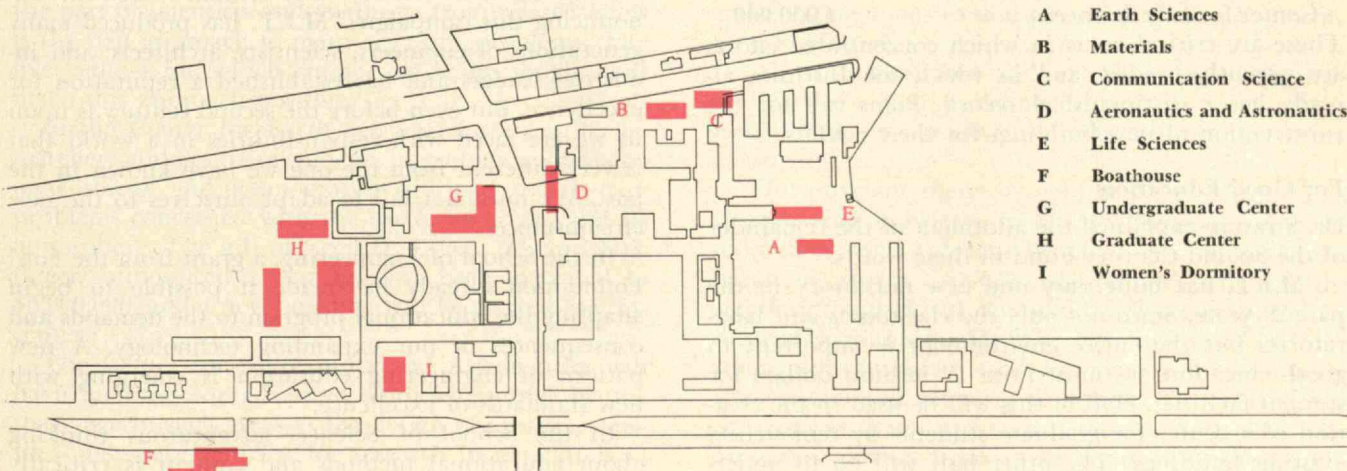
The Challenge

In announcing the Second Century Fund, Dr. Killian and Dr. Stratton, pointed out that:

"We live today in a world of increasing complexity, change and competition. It is a time of challenge to American leadership. From its pivotal position in international affairs, the United States stands responsible for the security of the Free World. This is a great trust. It requires sustained economic, military, and moral strength. It requires steady advance to a higher performance in all aspects of our national life.

"Throughout the world in underdeveloped countries we see the 'revolution of rising expectations.' In terms of its own legitimate expectations, America too is still an 'underdeveloped' country. Yet if we keep our science and technology vigorous and creative, we can build a stronger society. We can move to higher levels of health and economic achievement. We can steadily increase our investment in people, and in their growth and self-fulfillment.

"This combination of international responsibility and internal opportunity constitutes the central challenge to America today. It is in the face of these re-





quirements that the Massachusetts Institute of Technology must direct its course.

"Explosive developments at the frontiers of science invest our responsibility with a special urgency. We have a special obligation to educate students for leadership in the physical and social sciences, in engineering, in architecture, and in management. America properly looks to us to show the way. By realizing our full potential, we will meet that obligation. It is incumbent upon us, as never before, to pace and not to follow. This is our mission as we enter our second century."

The Schools and Centers

The needs of the Institute's five Schools which the Second Century Fund will meet are:

School of Engineering	\$9,000,000
School of Science	3,000,000
School of Humanities	2,500,000
School of Architecture and Planning	1,000,000
School of Industrial Management	1,000,000

These amounts, constituting one-fourth of the total, will be used for the improvement of curricula, methods, and laboratory facilities.

For five interdepartmental centers for graduate study and research, \$24,500,000 has been earmarked as follows:

Center for Aeronautics and Astronautics	\$4,000,000
Center for Earth Sciences	6,000,000
Center for Materials	6,000,000
Center for Communications Sciences	4,500,000
Center for Life Sciences	4,000,000

These are critical areas in which concentrated efforts are urgently needed, and in which the Institute already has a distinguished record. Plans call for the construction of new buildings for these centers.

For Good Education

Dr. Stratton explained the allotment of the remainder of the Second Century Fund in these words:

"M.I.T. has built only one new dormitory in the past 29 years. Since not only the classrooms and laboratories but the entire environment is important to good education, we must raise 12 million dollars for student facilities. Half of this will be used in the creation of a center for graduate students by remodeling existing buildings. The other half will go to under-

graduate facilities — the remodeling of old dormitories, the construction of a new student center, and the extension of athletic facilities, including building of a new boathouse.

"M.I.T. receives substantial support from Federal agencies for the support of research, but of necessity the greater part must be directed toward specific projects. There is need for funds to support basic research — the kind of research that can have no immediate application but which in the long run may produce the greatest good for the world. We have earmarked six million dollars for this purpose.

"Maintaining the high quality of our Faculty is one of M.I.T.'s greatest problems, for salaries in education have lagged at a time when the cost of living has been spiraling upward. Our situation is more difficult than that of many colleges in that the competition of industry for men of high caliber in science and engineering is very keen. With four million dollars we wish to endow at least eight professorships for first-rank men.

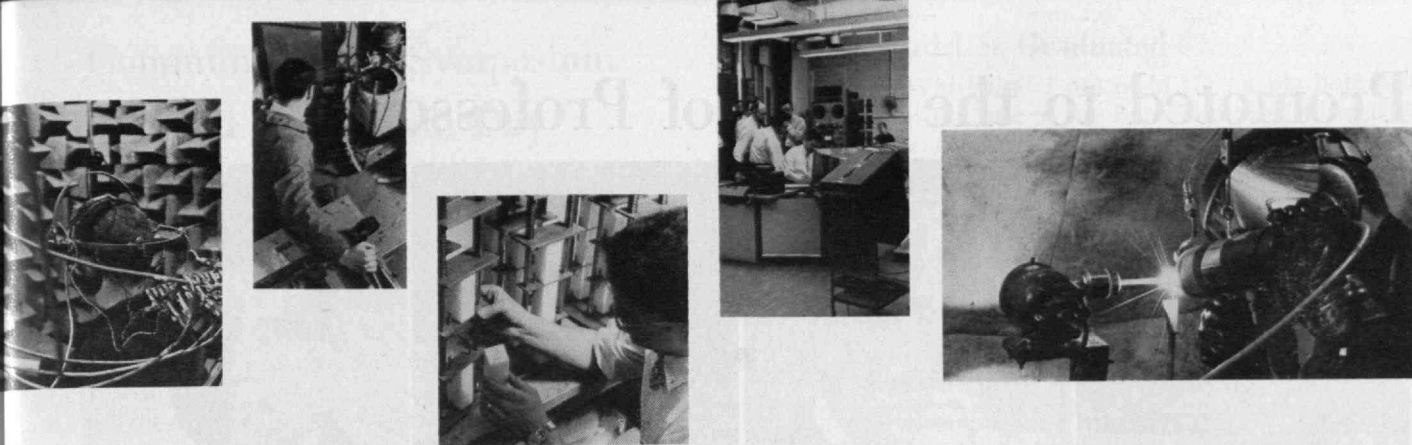
"We have had to increase M.I.T. tuition in order to make ends meet. The parents of some of our students can afford to pay high tuition, but many cannot. In democratic America it should be possible for any student of outstanding ability to attend M.I.T. No qualified young man or woman should be denied an education for lack of funds. We will need three million dollars to augment our resources for scholarships and loans."

For the Coming Century

During its first century, Dr. Killian noted in announcing this campaign, "M.I.T. has produced many generations of engineers, scientists, architects, and industrial leaders and has established a reputation for excellence. But even before the second century is upon us we are faced with responsibilities in a world that is very different from the one we have known in the past. We must not fail to adapt ourselves to the new circumstances."

In the School of Engineering, a grant from the Ford Foundation already has made it possible to begin adapting the educational program to the demands and consequences of our expanding technology. A new pattern of engineering education is emerging with new standards of excellence.

In the School of Science, adventurous thinking about educational methods and content is critically



needed, too. The Institute needs laboratory equipment which will contribute effectively to the teaching of present-day science. Every modern means of presenting subject matter must be assayed, so that the school may develop the ability to teach larger numbers of students, to teach them more thoroughly, and still excite them with the freshness and relevance of their subjects.

In the School of Humanities, the Center for International Studies, which has been sustained largely by short-term foundation grants, needs long-term financing. The school also will require in the future additional teachers of highest quality, more funds for graduate fellowships, more library materials, and funds to free its present Faculty for research in humanistic studies in a technological environment.

The School of Architecture and Planning feels a special responsibility for new advances in research and teaching to meet the challenge of urban problems. It will use its share of the Second Century Fund to improve its curriculum, especially in subjects related to engineering, and to establish the first laboratory in the United States for stress analysis of three-dimensional structures.

The School of Industrial Management, which in less than a decade has become one of the leading business schools of the nation, considers fellowships and funded professorships a primary need, and will soon require more space.

The Research Centers

Experience has shown that a collaborative effort on the part of scientists and engineers from related fields is the best approach to many scientific problems. The five centers for which support is being sought will make this approach possible.

In the Center for Earth Sciences, for example, researchers and graduate students in geology, geophysics, meteorology, and oceanography will work together on problems concerned with the earth, its ocean, and its atmosphere. The gift of Cecil H. Green, '23, and Mrs. Green, announced a year ago, has been increased to \$6,000,000, and a new building will be erected for this center.

The Center for Aeronautics and Astronautics will have facilities for advanced studies required by the space age in such areas as the design of missiles, satellites and space vehicles, for research in new kinds of

propulsion, and studies of the physics of the atmosphere and the solar system.

The Center for Materials will bring together work in which more than 400 graduate students and 100 professors already are engaged. Research on the atomic and molecular level has been responsible for many recent technological achievements, but the economic health of the country requires further developments and men trained in materials technology.

The Center for Materials and the Center for Communications Sciences, which was organized two years ago, will share a new building. The latter will include several hundred mathematicians, electrical engineers, psychologists, and others studying communications in the human brain as well as in computers and other man-made systems.

The Center for Life Sciences will be housed in a major addition to the John T. Dorrance Building. M.I.T. is now one of the principal centers for biological research on the molecular level, particularly in studies related to viruses and cancer, and for many years has been strong in research regarding food and nutrition.

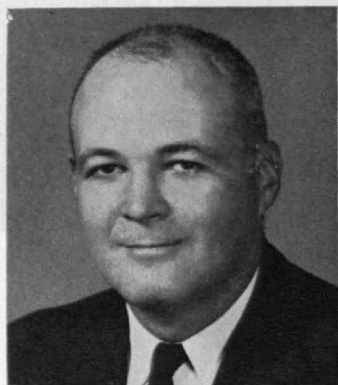
Contributions Already Made

Members of the M.I.T. Corporation already have pledged more than 13 million dollars to the Second Century Fund. Gifts which have been announced previously in *The Review* include those of the Ford Foundation, for advancement of the School of Engineering, \$9,275,000; Cecil H. Green, '23, and Mrs. Green, for the Center for Earth Sciences, \$6,000,000; and an anonymous commitment for a women's dormitory, \$1,500,000.

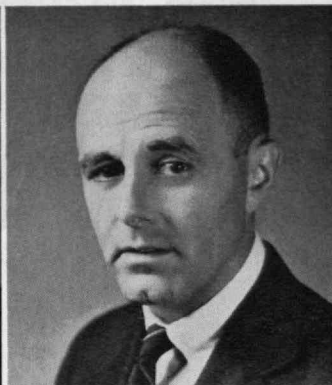
"All of us associated with the direction of the Second Century Fund fully realize that we undertake a task of large proportions," says Mr. Wilson, its general chairman.

"Our program, therefore, will be directed toward all those having an interest in M.I.T. Those receiving the most direct and personal benefits — her Alumni, and parents — will be carefully solicited. We will seek the significant support of the world-wide business and industrial community. All have benefited from M.I.T.'s tremendous resources, from her many contributions to their individual interests, and from the great generosity of her many earlier benefactors. Each will have an opportunity to support the Second Century Fund."

Promoted to the Rank of Professor



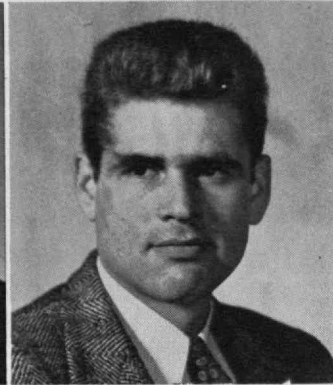
H. Ashley, '48
Aeronautics & Astronautics



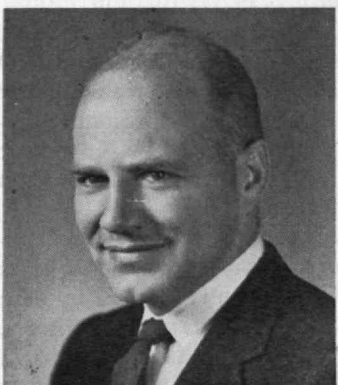
B. L. Averbach, '47
Metallurgy



W. F. Bottiglia
Modern Languages



P. Elias, 2-44
Electrical Engineering



J. F. Elliott, '49
Metallurgy



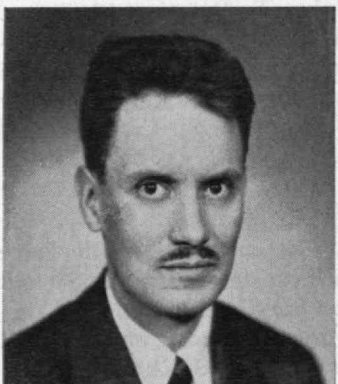
T. S. Gray, '29
Electrical Engineering



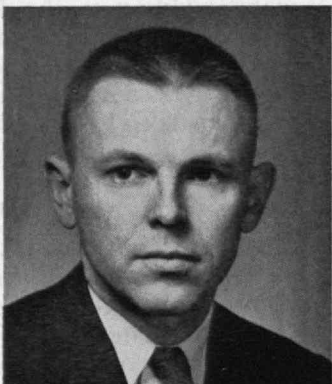
Y. W. Lee, '27
Electrical Engineering



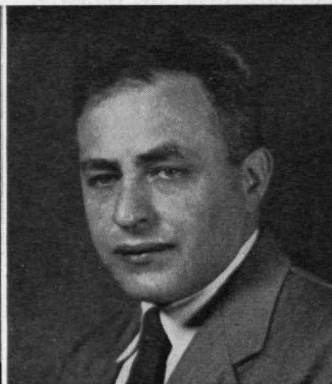
L. W. Pye
Economics & Social Science



D. J. Rose, '50
Nuclear Engineering



D. P. Shoemaker
Chemistry



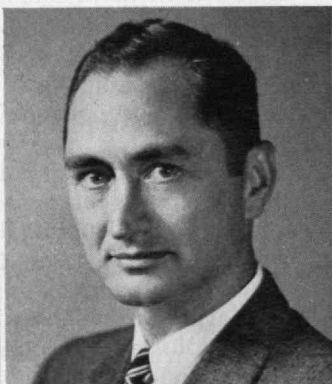
L. D. Smullin, '39
Electrical Engineering



M. W. P. Strandberg, '48
Physics



C. L. Svenson, '19
Mechanical Engineering



G. B. Thomas, Jr.
Mathematics



L. Tisza
Physics



F. M. H. Villars
Physics

Communications Symposium

Planned for Alumni Day

MONDAY, June 13, will be Alumni Day at M.I.T. The program will feature interdepartmental tours in the forenoon, a luncheon in the Great Court, a symposium in the afternoon on "Communications in Man and Machine," and a performance after the annual banquet by the André Eglevsky Festival Ballet.

President Julius A. Stratton, '23, will speak on the Institute's plans for the future following the buffet luncheon. Jerome B. Wiesner, Director of the Research Laboratory of Electronics and Acting Head of the Department of Electrical Engineering, will be the moderator of the symposium.

Participants in this discussion, and their topics, will be: Claude E. Shannon, '40, Donner Professor of Science, "The Transmission and Processing of Information"; Walter A. Rosenblith, Professor of Communications Biophysics, "Sensory Communication in Man"; Patrick D. Wall, Professor of Physiology, "Touch, Pain, Itch, and Temperature"; and Jerome Y. Lettvin, '47, Visiting Associate Professor of Physiology, "The Eye."

Dr. Wiesner is chairman of the group in charge of M.I.T.'s new Center for Communications Sciences; Dr. Shannon is one of the world's leading authorities on information theory; Dr. Rosenblith is noted for his studies of electrical activity of the nervous system; Dr. Wall has been studying the way in which the brain learns about events in the skin; and Dr. Lettvin will show how the eye of the frog may contribute to our understanding of man's optical system.

Performers in the ballet program that evening in the Kresge Auditorium will include Melissa Hayden and Edward Villella of the New York City Ballet, and the program will feature the *première* of a new ballet, *Soirée Musicale*, by John Taras.

Class Reunions

TWELVE M.I.T. classes will have reunions June 10 to 12, the weekend preceding Alumni Day, at the following places:

- 1905 — Wequassett Inn, East Harwich, Mass.
- 1908 — Melrose Inn, Harwich Port, Mass.
- 1910 — Charterhouse Motor Hotel, Waltham, Mass.
- 1915 — Snow Inn, Harwich Port, Mass.
- 1920 — Chatham Bars Inn, Chatham, Mass.
- 1925 — Chatham Bars Inn, Chatham, Mass.
- 1930 — Oyster Harbors Club, Osterville, Mass.
- 1935 — Baker House, M.I.T., Cambridge, Mass.
- 1940 — Chatham Bars Inn, Chatham, Mass.
- 1945 — Snow Inn, Harwich Port, Mass.
- 1950 — The Curtis Hotel, Lenox, Mass.
- 1955 — Woodbound Inn, Rindge, N.H.

Commencement Exercises

THE INSTITUTE'S commencement exercises will be at 10:30 A.M. on Friday, June 10, in the Rockwell Cage. Dr. Edwin H. Land will give the commencement address. If weather permits, a luncheon will be held after the ceremony in the Great Court.

Whirlwind I Is Graduated

TO GET Whirlwind I out of M.I.T., a big hole had to be cut in the side of the Barta Building. Fifteen of the historic computer's 40-foot-long racks then were shoved out, lowered by a crane to a flat-bed truck, and carted off to a First Naval District storage building in Boston's South End. The Wolf Research and Development Corporation has purchased the famous big machine, and plans to house it later on in a new building, for further work on military contracts.

Even though the main racks were not disassembled, Albert V. Shortell, Jr., '50, Vice-president of the Wolf Corporation, estimated that 50,000 separate wires were disconnected, labeled, and logged to prepare the computer for being moved.

Many members of the new owner's staff worked with Whirlwind I while seeking advanced degrees. Even though outmoded now, the machine still is considered suitable for such tasks as processing radar data on a large scale for meteorological studies.

A School To Be Beaten

"BEAT THE INSTITUTE" is a phrase heard among the college set at Cambridge and Boston, where the Massachusetts Institute of Technology, Harvard University, and Boston University, stand on the banks of the placid Charles River. The phrase has the ring of a collegiate yell. It sounds as if it might be used by the Harvards as they cheer their oarsmen in a contest with the M.I.T. crew in one of those bright spring scenes complete with pretty girl friends waving pennants on the banks of the river as the racing shells speed past.

Alas, it isn't so. "Beat the institute" is a phrase used mostly by undergraduates at the institute itself. They repeat it to themselves with determination late at night as they study for a quiz. They print it on their notebook covers. It represents a goal to them and they use it to describe their progress.

A conversation between two undergraduates at M.I.T. might go something like this:

"What've you been doing lately?"

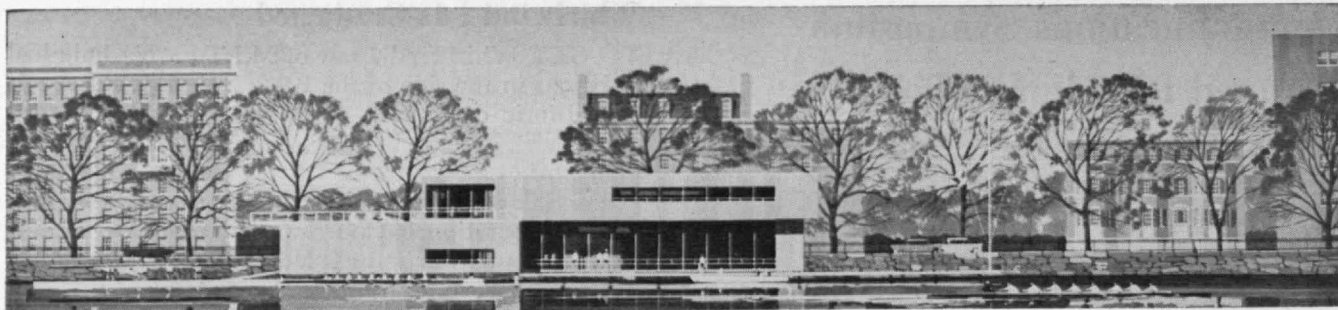
"Not much. Just hitting the books, trying to beat the institute."

Or, writing home, a freshman might state with some pride, "I've got a tough schedule this term, but I'm beating the institute so far."

That the phrase exists would seem to indicate there is something different about M.I.T. College students don't ordinarily talk about "beating" their school. But attending M.I.T. is something of a contest, the students say. The question to be resolved in this contest is whether the student can beat the stiff academic demands of the school and go on to graduate. . . .

For young men compelled by curiosity, there is hardly any limit to what can be learned at M.I.T.

— ROBERT SANFORD in the United Aircraft Corporation's quarterly magazine, *Bee-Hive*.



A NEW BOATHOUSE is one of the buildings proposed by planners of the Institute's growth. The need for this has been emphasized editorially by *The Tech* this year. This is a sketch of such a structure on the Charles.

Sloan Fellows in Europe After Washington Meetings

M.I.T.'s Sloan Fellows moved their classroom to Washington for a week in March. This was a highly mobile classroom, now meeting in the old U.S. Supreme Court Chambers, now in the House Ways and Means Committee Room, now in the Council Room of the AFL-CIO, and later in the Board Room of the Federal Reserve Board. The Sloan Fellows' faculty during this week included Vice-president Nixon, Secretary of the Treasury Anderson, Secretary of Labor Mitchell, Associate Supreme Court Justice William O. Douglas, and AFL-CIO President George Meany.

These Sloan Fellows are 45 executives, averaging 35 years of age, selected by their companies and by M.I.T., who now are nearing the end of an intensive year of study. In addition to their heavy academic load, during their year they have visited industrial plants employing advanced technologies in the Midwest, and spent a week in conferences with financial and industrial leaders in New York.

The Sloan Fellows are invariably surprised at the close inter-connection between the subject matter of their year's study at M.I.T. and policy formulation in Washington. Their study of monetary policy leads inevitably to the doors of the Secretary of the Treasury and the Chairman of the Federal Reserve Board. Their study of taxation focuses ultimately on the activities of the House Ways and Means Committee. Their analysis of labor-management relations policy invariably leads them to the Secretary of Labor and the Chairman of the National Labor Relations Board. Their interest in anti-trust legislation brings them ultimately to the Anti-Trust Division in the Department of Justice. Their understanding of these subjects is immeasurably heightened by the opportunity to meet face-to-face in Washington with government officials and political leaders. These are not in any sense formal lectures or briefings. They are informal meetings in which the Fellows are privileged to ask questions on any phase of policy or its execution and on which they invariably receive comprehensive and candid answers. One interesting by-product of this week-long visit of the Sloan Fellows to Washington is a highly favorable impression of the competence and dedication of the top officials of our government and the wish to spend a year or two on an assignment in Washington to learn in greater depth the operation of our government.

During this year's visit, the Sloan Fellows met at lunch with NLRB Chairman Boyd Leedom, NASA Administrator T. Keith Glennan, FTC Chairman Earl Kintner, AEC Deputy General Manager Robert Hollingsworth, and Civil Rights Commission Director Gordon Tiffany. Other illuminating sessions were held with Agriculture Under-Secretary True D. Morse, FAA Administrator Pete Quesada, Congressman Wilbur D. Mills, French Ambassador Herve Alphand, German Commercial Consul Albert Ernecke, Assistant Attorney General Robert Bicks, Deputy Secretary of Defense James H. Douglas, Governor C. C. Balderston of the Federal Reserve Board, Deputy Assistant Secretary of State Edwin Martin, and Executive Assistant Director of the Bureau of the Budget William D. Carey.

Between the completion of their classes in late May and the receipt of their master's degrees in June, the Fellows were to make a field trip to Europe to:

- 1) Study at close range the meaning of the European common market to the U.S.
- 2) Observe, assess, and learn from European progress in management and technology.
- 3) Broaden their understanding of the total environment of their firms, and strengthen their awareness of European culture, institutions, and attitudes.

Their plans called for visits to England, France, Belgium, and West Germany, and meetings with Dr. Ludwig Erhard, German Minister of Economics; Dr. Walter Hallstein, President of the European Economic Community; M. Jean Monnet, President of the Action Committee of the United States of Europe; and several members of the British Cabinet. Several of Europe's most modern plants also were on their itinerary.

The Engineers' Opportunity

IF THE ENGINEER aggressively plays his proper role in exploiting new technical knowledge, he will gain more prestige than ever before, Professor T. William Lambe, '44, of the M.I.T. Department of Civil and Sanitary Engineering predicted in an Engineers' Week talk this year at Wilmington, Del. But, he continued, "if the engineer does not move he will become a second-class technician, a servant on the one hand to the business school graduate, who makes the policy decisions, and on the other hand to the scientist, who understands and can use the new knowledge."

He urged fellow engineers, therefore, both to assume more "leadership in our increasingly technical life," and to "recognize the need for excellence" in academic and research centers.

A National Award For the Alumni Fund

FOR ITS "distinguished achievement in the development of alumni support," M.I.T. has been named a winner in the 1959 Alumni Giving Incentive Awards. The Institute shares top honors among private universities with Tulane.

To recognize the accomplishments of alumni in support of their colleges, the American Alumni Council last year inaugurated the Incentive Awards program. It is designed as a stimulus to broaden the base of support for higher education. Launched with a grant from the United States Steel Foundation, the Council administers the awards on behalf of American business and industry.

"We are witnessing today a growing relationship between corporate giving and alumni giving to education," said Dr. William W. Whitehouse, then President of the Association of American Colleges, as he inaugurated the program last year. "If our own graduates do not believe in their colleges and back up that belief with their gifts, why should business and industry be asked to contribute?" On the same occasion Paul W. Kearney of the U. S. Steel Foundation said of alumni: "Their potential for coming to the aid of higher education is enormous."

The Institute's award was made on the basis of all alumni giving during the year 1958-59, but especially because of the great strides made in the Alumni Fund. The record 1959 Fund to which 15,131 Alumni gave \$575,499 — increases of 13.5 per cent and 29 per cent, respectively, over the year before — climaxed a three-year period of growth almost without parallel in the history of alumni funds. It was attributable partly to the institution and development of a personal solicitation program that increased the number of Alumni actively working for M.I.T. through the Fund from less than 100 to nearly 3,000.



THE OLIVE BARNARD Memorial Room was dedicated by the School of Industrial Management on Parents' Weekend. The speakers were Dean Emeritus E. P. Brooks, '17, Dean Howard W. Johnson, Professor Erwin H. Schell, '12, and David N. Ness, '61, President of the Industrial Management Association. The wall hanging shown in the photo is an artist's print on linen by Henry Moore, and was a gift from Max Wasserman, '35.



The American Alumni Council's Assistant Director, David M. Thompson, presented its Alumni Giving Incentive Award, and a check for \$500 to President Julius A. Stratton, '23, in his office at the Institute on April 25.

The award carries with it a prize of \$500 each to M.I.T. and Tulane. Five colleges were given honorable mention: Princeton, Stanford, Vanderbilt, Northwestern, and College of the Pacific. This is not the first time the Institute has been honored by the American Alumni Council. In 1955 M.I.T. was given the top Fund Raising Award for the Alumni Fund's direct-mail program of that year.

Cosmic and Personal Puzzles

AT THE M.I.T. Alumni Council's 345th dinner on April 25, Bruno B. Rossi, Professor of Physics, spoke about cosmic rays, and William Speer, Associate Dean for Student Counseling, spoke about undergraduates. Both speakers emphasized the puzzling aspects of their topics.

Dr. Rossi pointed out that cosmic rays were the high-energy tools with which physicists worked before great accelerators (such as the one described on page 27) could be built. He also described the great showers recorded at M.I.T. stations in New Mexico and Bolivia, and explained the purpose of the instruments that soon will be sent into space for the Laboratory for Nuclear Science.

Dean Speer recalled the difficulties of boys who had found their preparatory work easy compared to what was expected of them at the Institute, of those who found their interests changing, of those who were troubled by the lack of familiar supports, and of those who got into trouble by trying to master all of the footnotes. But even though various combinations of internal and external pressures at times seem to deprive many undergraduates of their ability to learn, he concluded, most of the Institute's students nowadays recover from these attacks of "academic measles."

David M. Thompson of the American Alumni Council was present and announced the award of his organization to M.I.T. for its achievements in developing alumni support. William L. Taggart, Jr., '27, who presided, said that President Stratton has asked the Alumni Association to suggest a research project to which the \$500 should be granted. The dinner, as usual, was in the M.I.T. Faculty Club.

Talk of Our Times

The Future of the Helicopter

Igor Sikorsky, one of aviation's great pioneers, not only recalled his early adventures with helicopters but also went on to discuss their future, when he gave the second Lester D. Gardner Lecture at M.I.T. this spring. Part of his remarks follow:

THE HELICOPTER has by no means reached the limits of its performance and there is a most promising future in store for it in the gradual constructive development and improvement of the types that are now in existence. Multiple-engined helicopters which maintain excellent cruising characteristics with one engine out of commission already exist. Our twin turbine S-61 helicopter has demonstrated this. In larger machines powered by three or more turbines, it would be possible to provide not only cruising but hovering with one engine out of commission.

Eventually much larger vehicles can be developed and produced. With the gradual development of attachments and techniques involving the use of the crane, we can see this craft becoming a universal carrier of unique value. It could be used in connection with prospecting, mining, oil-drilling, installing of electric lines, delivering ready-made houses, and an unlimited variety of other interesting services. In many cases it would promote the growth of new enterprises.



Mr. Sikorsky wore a felt hat when flying his 1941 machine.



Cement blocks are delivered by a Sikorsky helicopter now.

I believe that combining rotary-wing and fixed-wing characteristics in a single aircraft would not produce a truly efficient and satisfactory machine, and consequently it could be of value only in a limited number of exceptional cases and even then mainly for small aircraft. However, I am convinced that there is a vast and valuable field wherein co-operation between the airplane and the helicopter may enable the two vehicles to work together and accomplish a variety of important missions in a most satisfactory manner.

These may include carrying comfortably outfitted pods that can be loaded with passengers and their luggage in the heart of a city and delivered by a crane-helicopter to the end of a runway and a waiting long-distance jet airliner into which the passengers could be transferred comfortably and quickly. The procedure would be reversed upon arrival at the airport of destination, thereby permitting much faster and more comfortable travel from the heart of one city to the heart of another.

Furthermore, we can visualize, say, a 24-passenger, high-speed jet airliner — perhaps even a supersonic one — waiting on a roof-top platform in the heart of a city. A crane-helicopter would pick it up, lift it to one or more thousand feet, meanwhile accelerating to a speed of, say, 120 miles per hour and launch the airliner within less than one minute after it has left the platform. Upon arrival at destination, the procedure would be reversed. The crane would meet the incoming airliner which would re-attach itself to the crane at an altitude of several thousand feet and then be flown and lowered to a roof-top platform in the heart of the city of arrival.

Even with the present speed of jet liners this would permit, roughly, a one-hour, 20-minute trip from the heart of New York to the heart of Chicago, a 25-minute trip from New York to Washington, D.C., etc. Such arrangement would also represent considerable advantages and value in military applications where airports may be in danger of nuclear bomb attacks. Numerous interesting possibilities of this nature may present themselves.

(Continued on page 38)

Four Aspects of Space Research

Military, propaganda, short-term, and long-range objectives differ and complicate the problem of proper organization of research and development on this scientific frontier.

BY VANNEVAR BUSH

THIS STATEMENT of the views of the Honorary Chairman of the M.I.T. Corporation was written at the request of the Committee on Science and Astronautics of the House of Representatives, and submitted in lieu of appearing before the committee during its recent hearings on a bill to amend the National Aeronautics and Space Act.

THE PROBLEM of the appropriate organization of space research and development is complex, because of diversity of objectives and the inevitable complication of government organization. I believe it may help clarify the subject if it is broken down into four aspects:

- 1) The military aspect.
- 2) The propaganda phase.
- 3) The short-term scientific objectives.
- 4) The long-range aspects.

There is no question that the military aspects are of supreme importance. They involve the development and production of long-range, ballistic missiles, and in particular their range, precision, reliability, and protection against surprise attack. Beyond this lies the exceedingly difficult problem of the anti-missile missile. We cannot fail to press forward energetically and wisely on all these matters. I am not one who is terrified by the so-called missile gap. The risk of enemy attack is not greatly influenced by whether we are slightly ahead or behind in the race; it becomes appalling only if we are so foolish as to lag behind to such an extent that we might be overwhelmed before we could retaliate. We must not fail to put concentrated effort into assuming that we

at least equal, and if possible excel, in bringing the long-range missile to the point of full precision and reliability. Nor can we afford to lag in examining the counter-missile in all its forms. The solution of this latter problem may look to be impossible on the face of it. But we need to remember that, soon after the war, the attainment of precision in an intercontinental ballistic missile appeared equally difficult.

I do not need to emphasize that our military missile program has been full of confusion in the past ten years. In fact the astounding Russian progress has been due to the fact that, in a dictatorship, it is possible arbitrarily to concentrate effort on single objectives, and discard others. Russian scientists are brilliant, but no more able than are ours. I feel sure our engineers are better than theirs, and the development of missiles is largely an engineering job. But we have scattered our efforts at times, and we have been simultaneously doing many other things, some of them of great importance indeed, and some of them trivial by comparison. We are not organized as well as we might be for military effort during a period of relative peace.

Soundness at the Top

I can pass over the details of this subject and turn at once to the heart of it. No organization will ever work well in its details unless it is utterly sound at the top. No complex developmental program will ever be consistent and well integrated unless the over-all planning function is ably performed. The simple fact is that we do not have a sound system of top-level

military planning. The Joint Chiefs of Staff system does not work for its intended purpose. We have three sets of plans and three programs, not a single integrated plan. The reason for this is utterly clear. The senior commanding officers of the services, with their heavy responsibility for their own organization cannot be expected to function as a planning body, or to sit in judgment on the plans of their members. This involves no criticism of individuals; many of the Joint Chiefs have been very able officers indeed; many of them also are good friends of mine. It is the system that is wrong, and that has been wrong ever since unification was undertaken. The lack of integrated military planning at the top cannot be resolved by the secretary and his civilian aides. They can hardly be expected to become expert military planners overnight. Nor, for that matter, in these rapidly moving days, can men of military training alone grasp scientific trends adequately in order to plan wisely.

A sound system would be one in which top-level military planning would be conducted by a body of military men, of equal eminence and rank to the Joint Chiefs, on their last assignment before retirement, divorced completely from the services in which they served, backed up by a staff of brilliant young officers completely under

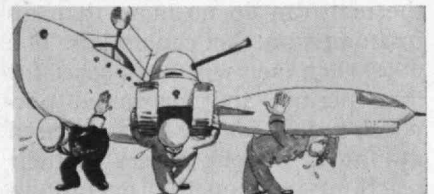




Photo by Robert Emmett Ginna

Dr. Bush was being interviewed for TV when this photo was taken.

their control and protected against discrimination because of this assignment, backed up also by consultants and advisers drawn from the most able scientists and engineers of the country. We have nothing of the sort. Unless and until we secure it, we will proceed amid confusion and cross-purposes.

A Stunt Can Be Costly

Let me now turn to the propaganda phase of the whole effort. We lost the first round on this subject. In all probability we will lose the next round. It hurts our pride, and it has done some good in shaking us out of our smugness. But I do not think it has done us a great deal of injury in our relations with the hesitant nations of the world. They are going to look much more deeply into our strengths and intentions than the question of who first shoots the moon, or puts a man into space. Incidentally, on this latter, I trust we will not act prematurely, urged on by our pride, and kill some promising youngsters in the process. If we do we will certainly witness a public reaction which will hamper far more important parts of the program. Putting a man in space is a stunt; the man can do no more than an instrument, in fact can do less. The days when men will be in space for long periods and for varied purposes, are so far off that we need not hurry on one aspect of their reactions and potential operations.

There are far more serious things to do than to indulge in stunts. As yet the American people do not understand the distinctions, and we in this country are prone to rush, for a time, at any new thing. I do not discard completely the value of demonstrating to the world our skills. Nor do I undervalue the effect on morale of the spectacular. But the present hullabaloo on propaganda aspects of the program leaves me entirely cool.

Some of the scientific results flowing from the successful launching of satellites are valuable and intriguing. I have watched with keen interest as we have learned more about the form of the earth, and the nature and composition of the gas envelope which surrounds it. The extraordinary feat of bouncing a radio message off of the moon, or a satellite, is inspiring. There is much more to learn.

Yet I have to take, as an old hand at the subject, a cold-blooded view on any program of research. I have to ask what it costs. I also have to compare the program with other possible programs which might be carried on at the same cost, and at the same utilization of our all too limited scientific and engineering talents. When I do so, I am caused to pause. I conclude that we are overemphasizing this whole affair.

A Question of Balance

There is so much we do not know, and which we are relatively neglecting. We know as yet little of the mysterious process by which the genes in a cell can mould the entire growth and development of an organism, of a man. We have just begun to understand the depths of the earth under our feet, or the cause of the great ocean currents. We know that minute organisms can extract rare elements from sea water, and we suspect that some day we may be dependent upon their doing this for us, but we do not know how they do it. We make progress in conquering disease, and we feel that our relations with emerging nations may depend greatly upon our ability to help them in this regard, yet we spend as much on a few missiles as upon this entire complex subject. Of all the vast sums we spend each year on research, only 6 or 8 per cent is devoted to that basic and funda-

mental research, in biology, chemistry, physics, and mathematics, upon which our prosperity and stature in the next generation may indeed depend. Thus, while I acclaim the scientific results being obtained in space research, I feel that we in this country, with our youthful adherence to that which is new and spectacular, are far from a wise balance in our efforts.

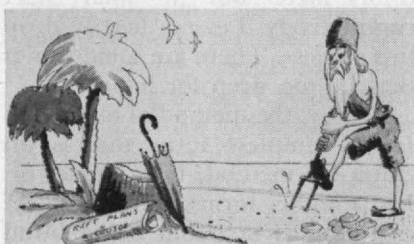
On our organization for this part of our program, I have little to offer. I felt that it was a mistake, when the National Advisory Committee for Aeronautics was transformed into the National Aeronautics and Space Administration, to discard the unique form of organization under which the former had operated highly successfully for 40 years. I hold no brief for government by committee. But neither do I approve an operating organization without the equivalent of a Board of Directors. Still the new organization seems to be working well, thanks to the presence of very able personnel at the top, and as long as we have fully able administrators and scientific directors, the exact form of organization otherwise does not matter too much.

Dreams and Reality

Finally, let me say a word about long-range aspects of this whole matter. I read everywhere that we are soon to put platforms in space and inhabit them, that we are going to make trips to Venus. I also read, written by those who do not understand relativity, that we are going to annihilate time and travel to the stars. A great deal of this is simple unadulterated absurdity. Some of it is real. I will not be surprised if some of these dreams ultimately come true, first because I will not be around to witness it, and second because it is foolhardy to set limits on what man may ultimately accomplish, provided one does not blithely disregard some of the simple laws of physics. In the meantime, I fear that we are presenting a very distorted picture to the youth of the land, among whom are the scientific leaders of the next generation. Certainly it is fine to dream of these things, one would hardly wish to cramp the imagination of youth. But this is a far cry from spending cold tax dollars on

aspects of a subject which cannot come to fruition for a generation or two. Certainly, today, there are aspects of the matter which warrant concentrated attention, and which are important in their own right for other purposes, such as control of the energy of fusion, or more intricate and versatile analytical and computing mechanisms, or new methods of communication, or synthesis of foods. Some day, long after we are all gone, men may fly about the solar system in space vehicles. But, if I were suddenly dropped on an isolated island, I would spend some time studying means of being adequately fed, clothed, and sheltered, in examining the resources of the island, before I started to bind logs together with vines to undertake a thousand-mile voyage. I have no quarrel with those who wish to plunge in and design now the ultimate space vehicle, if they enjoy doing so. I just do not want to join them. There are far more interesting scientific problems in the world than this. I had rather follow leads that appeal only after deep study, than to follow a spectacular vision which may vanish into the mists. Let us by all means look forward in every way, and not neglect the fact that man may some day even cease to be entirely dependent for his continued existence upon this old earth of ours. But let us not go crazy about it.

I hope that this brief analysis of the problem will be of some aid. I know full well that some of the things I have written will be vigorously opposed. I may even be accused of being so old that I can no longer see ahead. I trust you will have the opposite point of view fully expressed. I merely hope that, as this is done, the accepted forms of logical argument are not completely disregarded, and the limitations imposed by our present concepts of physical law are not dismissed with the statement that science can do anything whatever, if merely given enough funds.



Compton Lectures Stress Physics' Role in Biology



Dr. André Lwoff, third Compton lecturer, and Mrs. Lwoff at the auditorium.

IN THE Compton Lecture Series which André Lwoff of the Pasteur Institute in Paris gave at M.I.T. in April, he attempted "to inject a concentrate of biology into young, reactive physicists without eliciting the production of antibodies."

Our concept of life, he emphasized, has ceased to be metaphysical, and many brilliant physicists have contributed to biology's recent advances. In his first lecture, Dr. Lwoff dealt with order and entropy in living systems; in his second, he stressed hereditary order; in his third, he described functional order; and in his final lecture, he discussed the disorder in a cell that is infected by a virus.

After defining the organism as an independent system able to reproduce its kind, then showing in some detail what an amazing factory a living cell is, and reporting the latest findings regarding the elaborate feed-back mechanism which is involved, Dr. Lwoff said:

"In many textbooks, references are found to so-called living matter or substance. Such a thing does not

exist. Only organisms are alive. Separated from its context, i. e., extracted from the cell, a nucleic acid or enzyme is just an organic molecule. The organism is an integrated system of structures and functions. Biochemistry, biophysics, physiology, and genetics have merged into a new discipline, molecular biology, which interprets life at the level of the individual molecules.

"Some biological problems have been solved, but a number remain to be solved. Life is still something fascinating, but many of the fundamental problems of biology now are posed in molecular terms. So are some of the problems of pathology, such as the cancer problem . . .

"Today physicists are an essential part of biological order, and a number of problems are ready for them, waiting. Do not let them wait too long."

This was the third series of lectures given in memory of President Compton. Niels Bohr was the first lecturer, Otto Struve the second. The Technology Press will publish all of these lectures.

Logic in Scientific Writing

It is sometimes the missing ingredient — so here are some reminders about it and “the everlasting Universe of Things”

By MARTIN S. PETERSON

THE OPENING LINES of one of the poet Shelley's poems read:

*The everlasting Universe of
Things
Flows through the mind
and rolls its rapid waves . . .*

The truth of these lines strikes home in a way that Shelley never intended. When a multitude of detailed experimental data roll along in “rapid waves” in a scientific report — a journal article, for example — it is a rare reader who can keep his head above water. This is not surprising if the reader is not sufficiently specialized to follow the article. But when the specialized reader has trouble, the fault lies in the article — or if you come right down to it — in the writer. And the fault itself, all too often, is lack of logic in the development of the article. Logic, in fact, is sometimes the missing ingredient in scientific writing.

A student planning a career in science today can scarcely be successful without gaining, somewhere along the line, an exceptional facility in the arts of communication — that is, in gaining a mastery of the written word, the spoken word, of graphic presentation, and all of the other means of technical communication used today. Gaining facility begins with the fundamentals — and the fundamentals, in my view, are the methods of logic.

So, let us go to work on inductive logic — and dust off some of

the traditional methods of thought. They are still, despite their venerability, foundational to good organization, the “without which, nothing” of sound writing. The chief ones are the method of agreement, the method of differences, the method of residues, the method of concomitant variation, and the method of exclusion.

How We See the World

It is not difficult to see that in their elementary form these methods are native to us. They represent not only ways of organizing scientific thinking but also political thinking or sociological thinking or just thinking. Thus, from childhood on we see the world in terms of the method of agreement — the “likeness” of things that puts them into groups, subgroups, etc. One might cite the Linnaean System of binomial nomenclature as one of the great achievements in codifying the “likenesses” of things — in this case, plants.

We are also inclined from our earliest years to use the method of differences — that is, to take notice of the fact that if something happens several times in a row but then suddenly does not happen — that something has been added, or subtracted, or changed, to prevent the expected happening. A sophisticated example of the use of this method is to be found in the discovery that only the *L* forms of the amino acids are metabolically acceptable to the animal.

The method of residues is yet another way of looking at the “Universe of Things” — one that is again familiar from our earliest years. We use the method of residues when confronted by a complex event in nature, some antecedents (causes) of which are known and some of which are not.

Within that “residual” of antecedents that we suspect are present may lie the answer to an important part of the “complex event.” We spend a great many working hours of our lives searching for such antecedents. One of the classic examples of an application of this method was the discovery of Neptune, which came about as a result of observing a “quirk” in the orbit of Uranus. Since the orbit of Uranus deviated from contemporary theory — namely, that within the complex of celestial bodies and because of the forces exerted upon it, a star or planet should follow a calculable path — the heavens were searched and Neptune — the “antecedent” of the phenomenon was discovered.

Variation and Exclusion

The method of concomitant variation is used so routinely in scientific study that it needs no particular elaboration. If you add a flavoring substance to a given food, the flavor of that food will vary concomitantly with the amount of the flavoring substance, its interactions with constituents of the food, its increase or decrease in potency with time, and so on. Somewhere, in almost every experiment, concomitant variations will be used as one of the tools of logic. I have been told that something like the “method of concomitant variations” can be used to explain abstract art — that the erratic forms and the juxtaposition of clashing colors meter out the final effect cumulatively. Let me hastily drop this subject. There are some things that lie too deep for logic.

Finally, the method of exclusion. In its simplest form this is an empirical method, trial and error. In its higher forms, the method of exclusion is far from being blind

Martin S. Peterson edits Food Technology and Food Research for the Institute of Food Technologists, and formerly was on the faculty of the University of Nebraska. This article consists of a portion of a lecture that he gave at M.I.T. this year as a guest of the Department of Food Technology.

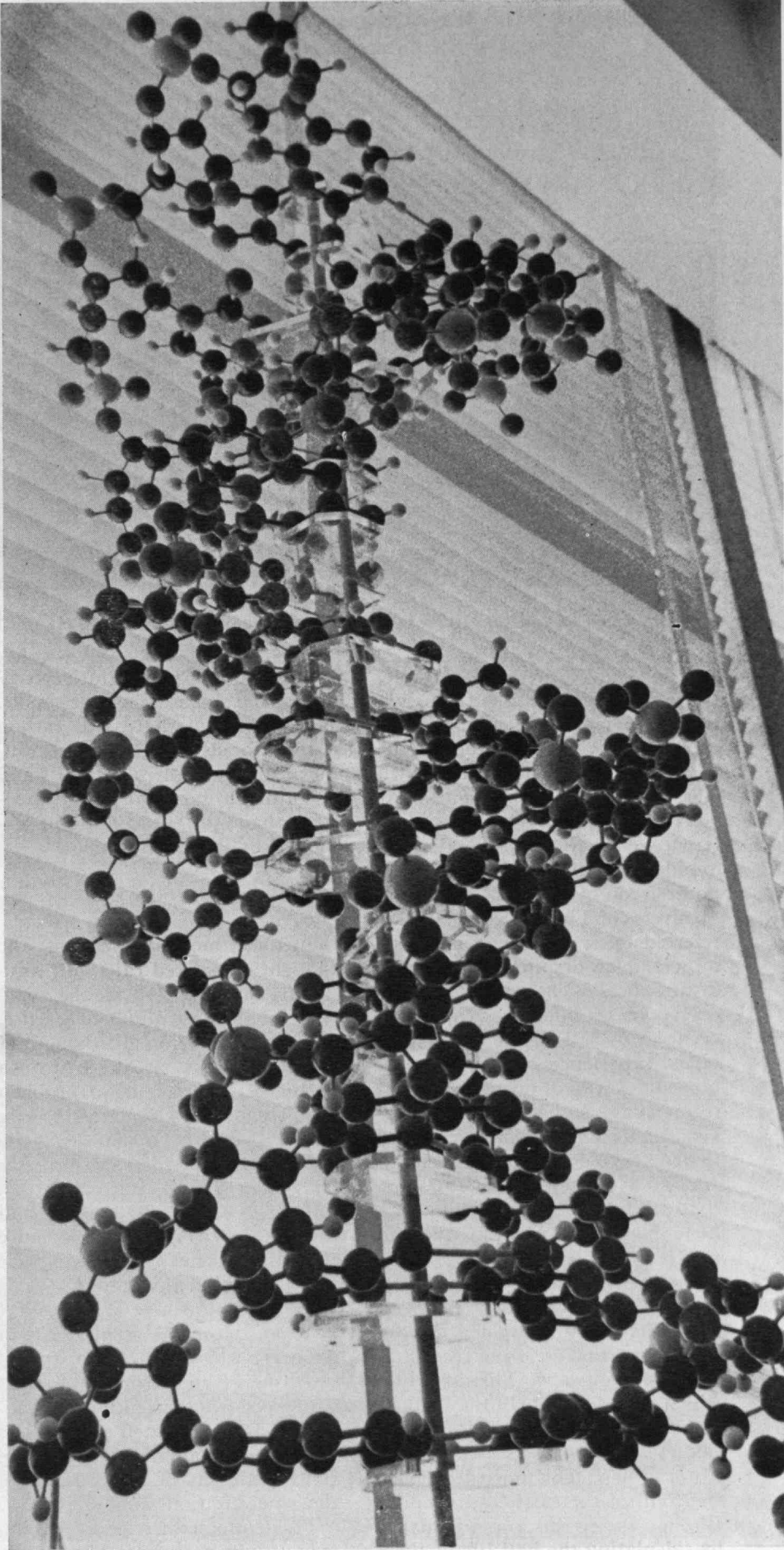
trial and error. It can require some rigorous thinking.

To exemplify this, let me cite the mathematical riddle of the 12 coins, one of which is counterfeit. The problem is to find the counterfeit coin in three weighings on the balance and to indicate, when found, whether the counterfeit coin is heavier or lighter than the coins that meet legal weight requirements. You proceed, in this problem, by successively excluding the non-counterfeit coins—dividing the 12 coins into groups of four, weighing two groups of four to catch the imbalancing group—and so on until you have excluded all but the lightweight—or heavy-weight—coin. I shall not insult your intelligence by describing the steps leading to the exact solution of this conundrum of the counterfeit coin.

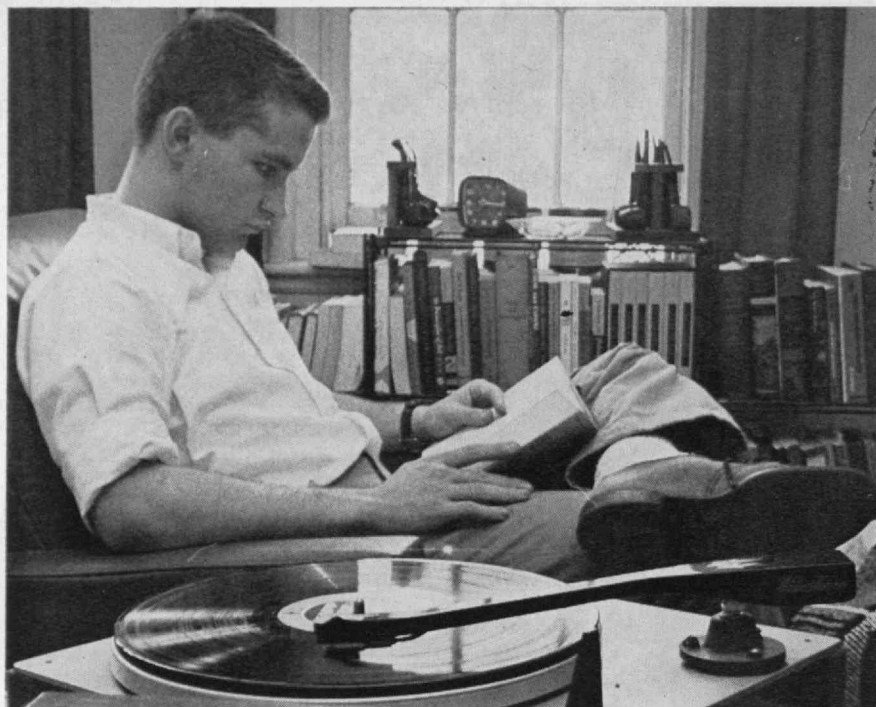
Well, there you have them—the dry bones of formal inductive logic. I admit at once that we cannot take the head bones of this logic, fit them to the neck bones, and the neck bones to the shoulder bones, and so on down to the ankle bones—and reproduce the structure of scientific thinking. But when logical structure is absent from writing, or is incoherent, the effect of disorganization is created—and your hard-earned data are blighted.

Inference and Hypothesis

Putting flesh on these bare bones of logic is quite a task, but that brings up the role of inference and hypothesis. Inference, hypothesis, conjecture, postulation—all of these derive in one way or another from “intuitive” reasoning. Sometimes it is a matter of proceeding from general principles to other general principles. Sometimes the



This model of a molecule is being studied currently by biologists at the Institute.



Reading helps a student gain insight into the meaning of "order in nature."

process is not quite so respectable. One of the time-honored proclivities of human beings is to guess at meanings—"educated guesses" if possible, shrewd guesses if knowledge is lacking, intuitive guesses if you have the gift. Hypothesis, inferences, even guesses—all are founded ultimately on the "hypothesis of hypotheses"—that the "Universe of Things" which Shelley referred to, is an orderly universe, subject to law despite the occasional disturbances of chance.

Hypotheses, inferences, "inklings" occur to us as a result of our previous experiences with the phenomenal world, or our ingenuity in seeing analogies between one mechanism and another, or our ability to detect a relationship between the attributes of "things" and time or space. This last point requires a little elaboration, and an example may help:

Carbon is a "thing." It has a half life that can be used as a clock—a recording clock in somewhat the same sense that we have recording spectrophotometers. This half life, which is an attribute of the "thing" we call carbon, inspired the hypothesis that the tools used by prehistoric man, tools buried deep in the folds of the earth and sleeping through the epochs, could be dated by calculating the half life of their carbon components. The hypothesis

was put to test, refined into a technique, and you all know the results. It was through the use of carbon dating, for example, that the Piltown man was revealed as a fraud—not much more worthy of attention than the Cardiff giant exploited by P. T. Barnum.

The Concept of Order

Inductive methods cannot be thought of as fixed rules and regulations superimposed on the scientist and the institution of science. These methods must be thought of only as points of departure—a means of approaching a problem and organizing the attack. Techniques of much greater specificity are required for the exacting tasks of science today. But they, too, follow a system, a pattern, and therefore their "bare bones," once recognized, can be used to give structure to scientific reports.

In the *Grammar of Science*, Karl Pearson epitomizes science as "an endeavor wherein facts are studied in terms of their correlation and sequences, where scientific generalizations are formulated on the basis of these relationships, and where rigid criticisms of the validity of the generalizations must prevail."

This epitome of science as a human activity presupposes an orderly universe. If there is no order in

nature then you can have no correlations of fact, no sequences, no generalization—no logic.

But what precisely is this concept *order in nature*? Of what importance is it to our scientific labors, including writing? To answer the first question would require volumes—and, fortunately, I can give you the names of a few.

Some Books to Read

One of the truly great books of recent years is Alfred North Whitehead's *Science and the Modern World*—a brilliant synthesis of 400 years of scientific thinking together with the human meaning of the discoveries of science. Another essay, this time an intermingling of the history of scientific ideas and speculative description relating to the physical basis of life, is *Man on His Nature* by Sir Charles Sherrington.

Certainly, if you have not done so, you should read Conant's *On Understanding Science*. Dr. Conant, like Whitehead, is also concerned with the great ideas of science. It would be difficult to find a book that states more concretely the never-ending search for order. Finally, I would recommend *The Common Sense of Science* by J. Bronowski, an English mathematician. Bronowski discusses the primary concepts of the natural order in a style worthy of the great essayists of English literature—Dryden, for example.

Now, to answer the second part of my question—of what importance is a knowledge of the concept of the order of nature to writing?

It is, I think, of very practical importance. It is through knowing the facts, the speculations, the logic that have been built up over the years in connection with the search for order that a student gains facility in developing inferences and hypotheses useful in his field of interest. The initial inference has a great deal to do with making a piece of scientific writing intelligible—or, for that matter, worth while. It is also an integral part of the logic of science—a means of keeping afloat when—

The everlasting Universe of Things

Flows through the mind and rolls its rapid waves.

The Physicists' New Accelerator

M.I.T. and Harvard soon will use an immense, complex instrument to aid their study of fundamental particles

Photos by W. H. Tobey

Now that components are on hand, the buildings are nearing completion, and the Cambridge Electron Accelerator is being assembled, you can see how big it will be. This new device for the study of high-energy physics will be one of the most impressive pieces of scientific apparatus on any campus. Even the men who have been envisioning, designing, and building it say that it looks larger to them—now that it has begun to take shape—than they had expected it to look.

When completed next year, this alternating-gradient synchrotron will impart more energy to electrons than ever has been given to them before by man-made machinery. Larger devices have been built to accelerate protons, but this will be the world's most powerful electron accelerator.

Sixty times a second, this "atom

smasher" is expected to spurt out a pulse containing 100 billion electrons with 99.9999996 per cent of the speed of light. This velocity will have given them 12,000 times their rest mass. This beam will be sent into an experimental hall larger than a football field. There it will serve as an ultra-sharp tool for the dissection and study of the structure of the smallest stable particles of matter.

Its Appearance Now

M.I.T. and Harvard agreed in 1956 to undertake the construction and operation of this powerful machine jointly. Its potentialities were studied intensely for two years before ground was broken (with a two-handled shovel). It will represent a total investment of nearly 12 million dollars, and be used by the faculties and graduate students of both universities.

The site is near the Harvard Cyclotron Building. To see it, you can turn off Massachusetts Avenue into Everett Street, cross Oxford Street and proceed to the "Do Not Enter" signs. There a building that somewhat resembles a railroad roundhouse is rising. Between it and the street you can see a huge capacitor bank and a couple of big cooling towers. The most impressive part of this installation, however, is underground, beneath a parking place.

The director, Professor M. Stanley Livingston, and his associates now occupy a new four-story office building. From this, professional visitors can be escorted through a maze of cables, work benches, and metal stairways, to the hub of the circular concrete tunnel in which the accelerator now is being set up. Four straight tunnels extend from the center to the rim of the big



The 30,000-square-foot experimental hall is partly built and being used as a shop; offices adjoin it at the left.

hollow ring. They are lined with shelving for the cables and pipes that will serve the circular apparatus. Walking around the ring, which is 236 feet in diameter, is like touring a subway.

From one side of the ring a spur juts out, in which a linear accelerator is to be placed. On the other side is a large opening surrounded by shielding where the beam will enter the experimental hall. Trucks park in this future classroom now to be unloaded with the help of a 40-ton crane, which will be used later to move experimental apparatus. The linear accelerator also has been set up in this hall temporarily for testing.

How It Will Work

When installed in the spur later, this accelerator will impart 20 million volts of energy to the electrons boiled off a hot cathode in a pot at the far end. These will shoot from the linear accelerator into the circular accelerator, which will increase their energy 300-fold as they go around and around in it before they fly out to hit targets in the

experimental apparatus in the big hall.

The electrons will race around the ring in a vacuum chamber consisting of an oval tube 5 inches wide by 1½ inches high. This tubing will be between the poles of four dozen magnets, which will focus the electrons and will hold them in a circular path. Each magnet is 12 feet long, contains 14,000 thin sheets of metal, weighs eight tons, and will be excited by two coils above and two below the gap between its poles. Each coil will consist of 10 turns of 91-strand twisted copper cabling, between which copper tubing will carry cooling water. Each magnet will rest on two free-standing piers, so that settling of the tunnel floor will not alter their alignment.

The function of this array of magnets is to control the path of the beam. The electrons will receive their energy as they go through 16 copper cavities equally spaced around the ring between the magnets. These will be coupled together by waveguides. The million-watt-power system required by

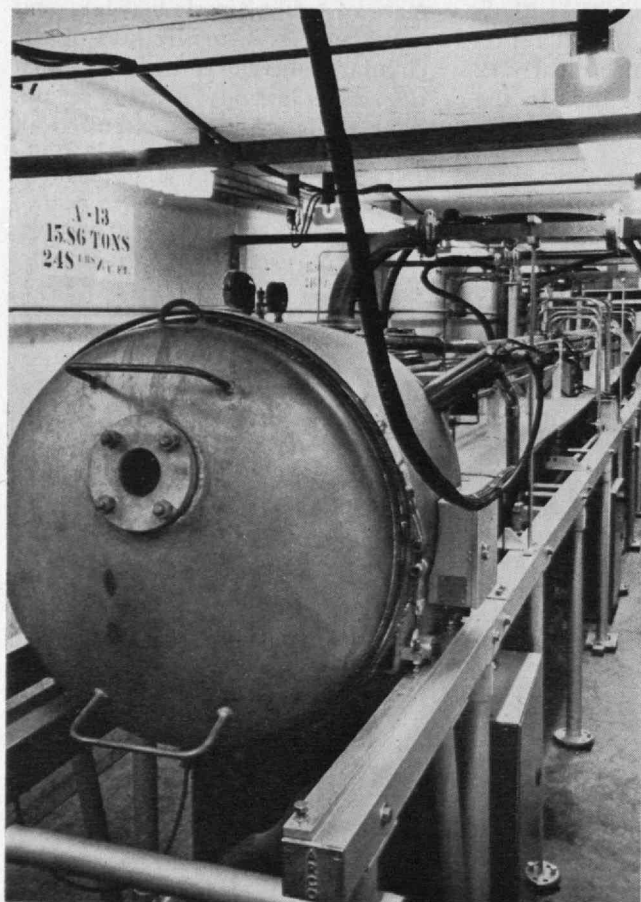
the radio-frequency system is comparable to that of one of the largest search radar installations.

The New Frontier

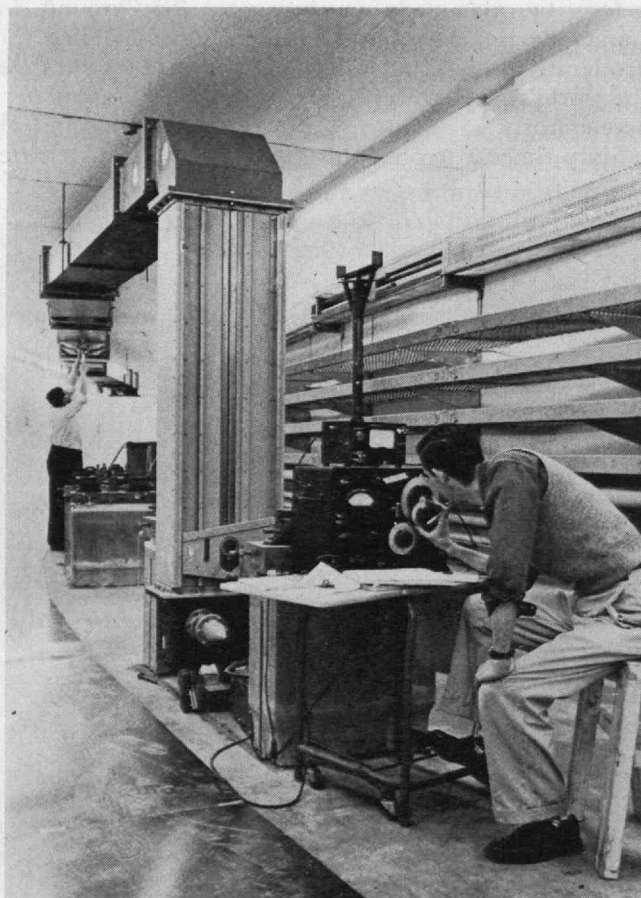
The pulsing rate in this synchrotron will be 300 times as great as in the cosmotron at Brookhaven. If this accelerator's 6 billion-volt electrons could be pitted against bursts of light in a race around the world, they would cross the finish line only four inches behind the light.

The object, however, is not to run races, but to give physicists a sharp, hard-hitting, new tool with which to examine the structure of fundamental particles. When protons and neutrons are shattered, the pieces are unstable particles, and this machine is expected to make a multitude of these available.

"We expect these high-energy electrons to produce heavy mesons, negative protons, and other new unstable particles with energies higher than can be obtained in any machines now in use," Professor Livingston explains. "They should appear in numbers sufficient for important new experiments."



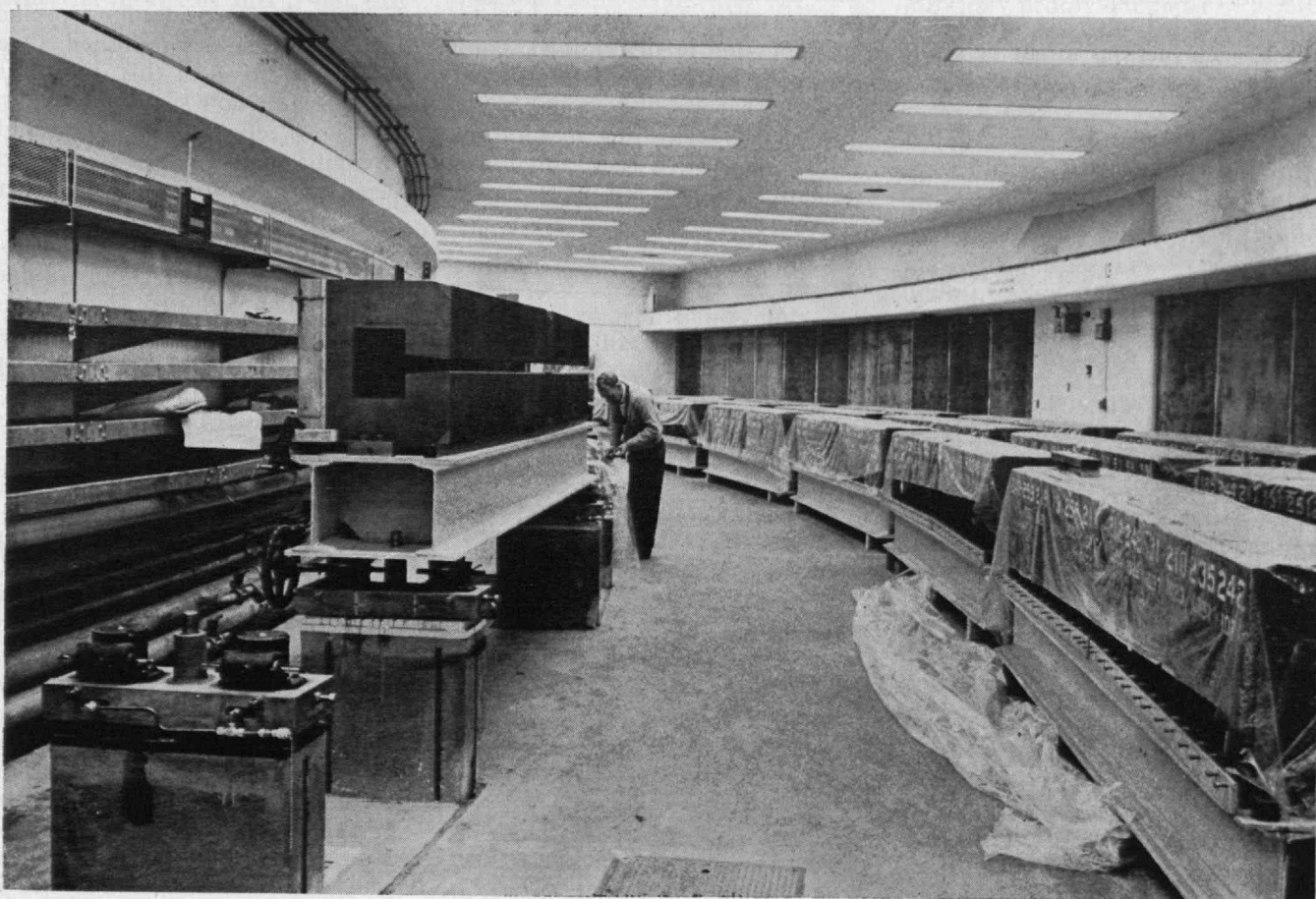
Electrons will go through this "linac" into synchrotron.



In big machine, they will gain energy from this wave guide.



Forty-eight huge magnets will go into circular tunnel. Here field measurements are being made on a prototype magnet.



Electrons will circle tunnel in vacuum tube between the poles of magnets like this, when all 48 are in place.

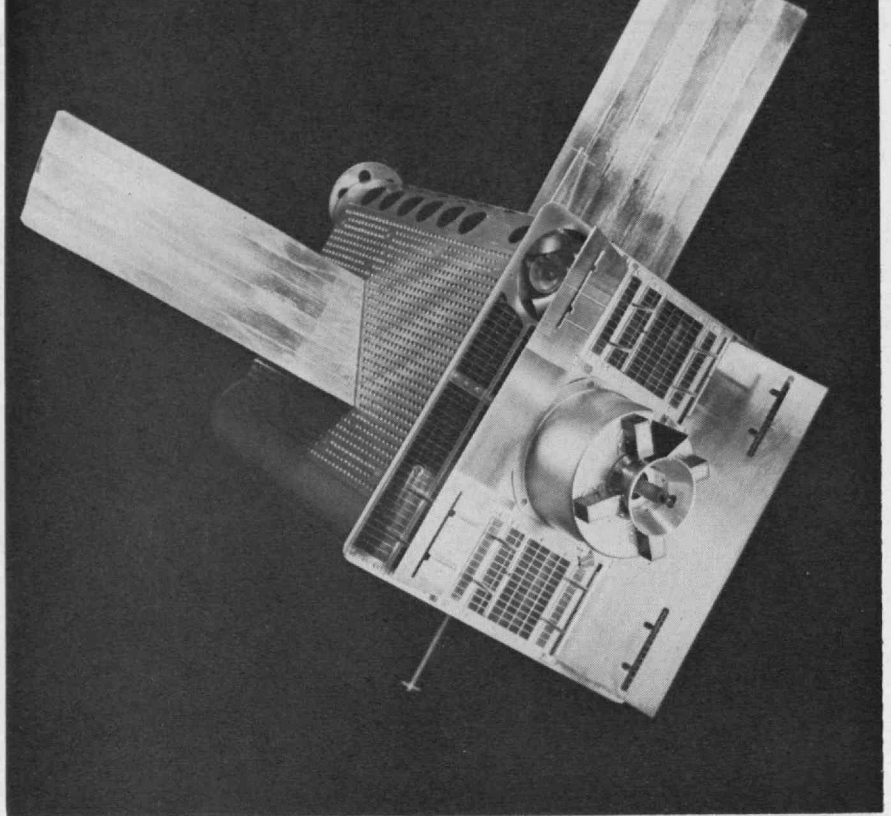
How to Study Mars Without An Astronaut

NO ASTRONAUTS are needed to begin the photographic exploration of other planets, the M.I.T. Instrumentation Laboratory found in a study of recoverable interplanetary space probes which was made public this spring.

On June 21, 1963, for example, a space vehicle could leave Cape Canaveral, pass within less than 5,000 miles of Mars, and bring home a photo of the red planet on May 14, 1965. On November 2, 1962, a similar vehicle could leave for Venus, and return with its picture even sooner, on February 5, 1964.

The high-resolution photos, showing about 40 per cent of the surface of each planet, could be better than those taken of the moon through the finest telescopes. Yet the space probes needed to go get, and bring back, such pictures might be small and light enough to be carried in a pick-up truck.

A model of such a probe is pictured on this page. It would navigate automatically, control its at-



This side would normally face sun; drawing below shows other side of vehicle.

titude automatically, send back weekly reports on its progress — and deliver the picture taken by its camera within 200 miles and 5 minutes of the predetermined point and time on earth — in a re-entry capsule that would float and broadcast signals indicating its location.

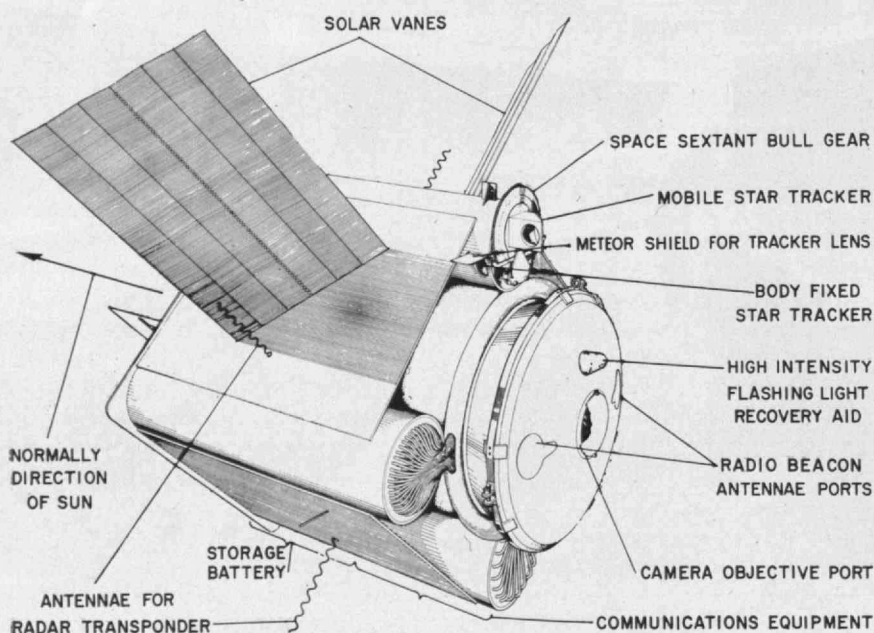
No plans have been announced to build or send out such probes.

One way of rigorously studying the problems to be met in building a second generation of space vehicles, however, is to consider how specific tasks might be accomplished. One of the objectives of this study was to determine how small, how light, and how reliable a device could circumnavigate the solar system and begin the reconnaissance of other planets:

The vehicle envisioned and described in the 810-page, four-volume report that resulted from this study would weigh only 340 pounds. This is well within the capability of soon-to-be-available rocket vehicles for initial boost into a planetary orbit.

The photograph of the model shows the face of the vehicle that normally would be kept toward the sun. In its center is the small rocket that would be used periodically to correct the vehicle's velocity. Around it are the solar cells that would provide power for the apparatus, shutters to keep the temperature within the vehicle relatively constant, and a dipole antenna array. Protruding from two of its sides are solar vanes to assist it in maintaining the desired attitude. Behind the rocket nozzle is

(Concluded on page 40)



The round pod containing the pay load is all that would return to earth.

When You Judge Architecture

It is wise to remember that it is a special functional art with a special quality of its own and great clarity

BY STEEN EILER RASMUSSEN

FOR centuries architecture, painting, and sculpture have been called the Fine Arts, that is to say the arts which are concerned with "the beautiful" and appeal to the eye, just as music appeals to the ear. And indeed most people judge architecture by its external appearance, just as books on the subject are usually illustrated with pictures of building exteriors.

When an architect judges a building its appearance is only one of several factors which interest him. He studies plans, sections, and elevations and maintains that, if it is to be a good building, these must harmonize with each other. Just what he means by this is not easy to explain. At any rate, not everyone can understand it any more than everyone can visualize a building merely by looking at the plans. A man to whom I was explaining a project for a house he wanted to build, said deprecatingly: "I really don't like sections." He was a rather delicate person and I got the impression that the mere idea of cutting into anything was repulsive to him. But his reluctance may have arisen from the correct idea of architecture as something indivisible, something you cannot separate into a number of elements. Architecture is not produced simply by adding plans and sections to elevations. It is something else and something

more. It is impossible to explain precisely what it is — its limits are by no means well defined. On the whole, art should not be explained; it must be experienced. But by means of words it is possible to help others to experience it.

Like Sculpture, But . . .

The architect works with form and mass just as the sculptor does, and like the painter he works with color. But alone of the three, his is a functional art. It solves practical problems. It creates tools or implements for human beings and utility plays a decisive role in judging it.

Architecture is a very special functional art; it confines space so we can dwell in it, creates the framework around our lives. In other words, the difference between sculpture and architecture is not that the former is concerned with more organic forms, the latter with more abstract. Even the most abstract piece of sculpture, limited to purely geometric shapes, does not become architecture. It lacks a decisive factor: utility.

Seen from an aeroplane high in the air, even the most gigantic skyscraper is only a tall stone block, a mere sculptural form, not a real building in which people can live. But as the plane descends from the great heights there will be one moment when the buildings change character completely. Suddenly they take on human scale, become houses for human beings like ourselves, not the tiny dolls observed from the heights. This strange transformation takes place at the instant when the contours of the buildings begin to rise above the horizon so that we get a side view of them instead of looking down on them. The buildings pass into a

new stage of existence, become architecture in place of neat toys — for architecture means shapes formed around man, formed to be lived in, not merely to be seen from the outside.

The architect is a sort of theatrical producer, the man who plans the setting for our lives. Innumerable circumstances are dependent on the way he arranges this setting for us. When his intentions succeed, he is like the perfect host who provides every comfort for his guests so that living with him is a happy experience. But his producer job is difficult for several reasons. First of all, the actors are quite ordinary people. He must be aware of their natural way of acting; otherwise the whole thing will be a fiasco. That which may be quite right and natural in one cultural environment can easily be wrong in another; what is fitting and proper in one generation becomes ridiculous in the next when people have acquired new tastes and habits.

Its Life Is Long

The Nineteenth Century had the very ill-advised idea that to obtain the best results it was necessary only to copy fine old buildings that were universally admired. But when in a modern city you build a modern office building with a façade that is a faithful copy of a Venetian palace, it becomes quite meaningless even though its prototype is charming — charming, that is, in Venice on the right site and in the right surroundings.

Another great difficulty is that the architect's work is intended to live on into a distant future. He sets the stage for a long, slow-moving performance which must be adaptable enough to accommo-

This article is an excerpt from Experiencing Architecture, a book published this year by Technology Press and John Wiley & Sons, Inc. (\$4.50). The author is Professor of Architecture at the Royal Academy of Fine Arts in Copenhagen and has been a visiting professor at M.I.T. This book was written to help "an interested teen-ager."

date unforeseen improvisations. His building should preferably be ahead of its time when planned so that it will be in keeping with the times as long as it stands.

The architect also has something in common with the landscape gardener. Everyone can grasp the fact that the gardener's success depends on whether or not the plants he selects for the garden thrive there. No matter how beautiful his conception of a garden may be it will, nevertheless, be a failure if it is not the right environment for the plants, if they cannot flourish in it. The architect, too, works with living things—with human beings, who are much more incalculable than plants. If they cannot thrive in his house its apparent beauty will be of no avail—with-

out life it becomes a monstrosity. It will be neglected, fall into disrepair, and change into something quite different from what he intended. Indeed, one of the proofs of good architecture is that it is being utilized as the architect had planned.

Finally, there is a very important feature which must not be overlooked in any attempt to define the true nature of architecture. That is the creative process, how the building comes into existence. Architecture is not produced by the artist himself as, for instance, paintings are.

A painter's sketch is a purely personal document; his brush stroke is as individual as his handwriting; an imitation of it is a forgery. This is not true of archi-

ture. The architect remains anonymously in the background. Here again he resembles the theatrical producer. His drawings are not an end in themselves, a work of art, but simply a set of instructions, an aid to the craftsmen who construct his buildings. He delivers a number of completely impersonal plan drawings and typewritten specifications. They must be so unequivocal that there will be no doubt about the construction. He composes the music which others will play.

A Documentary Work

Furthermore, in order to understand architecture fully, it must be remembered that the people who play it are not sensitive musicians interpreting another's score—giving it special phrasing, accentuating one thing or another in the work. On the contrary, they are a multitude of ordinary people who, like ants toiling together to build an anthill, quite impersonally contribute their particular skills to the whole, often without understanding that which they are helping to create. Behind them is the architect who organizes the work, and architecture might well be called an art of organization. The building is produced like a motion picture without star performers, a sort of documentary film with ordinary people playing all the parts.

Compared with other branches of art, all this may seem quite negative; architecture is incapable of communicating an intimate, personal message from one person to another; it entirely lacks emotional sensitivity. But this very fact leads to something positive. The architect is forced to seek a form which is more explicit and finished than a sketch or personal study. Therefore, architecture has a special quality of its own and great clarity. The fact that rhythm and harmony have appeared at all in architecture—whether a medieval cathedral or the most modern steel-frame building—must be attributed to the organization which is the underlying idea of the art.

No other art employs a colder, more abstract form, but at the same time no other art is so intimately connected with man's daily life from the cradle to the grave.



Professor Rasmussen found "the rhythm of the modern student dormitory" in Baker House. Aalto, he wrote, "created a building which entirely avoids the stereotyped rooms and ant-hill atmosphere of the old-fashioned dormitories."

BUSINESS IN MOTION

To our Colleagues in American Business ...

Of more than the usual interest is the following example of how Revere, a supplier, working with still another supplier, was able to help the ultimate customer produce a superior product for less money.

A manufacturer of automotive thermostats was having difficulty in securing the proper kind of copper cup which is the heart of its newest stat. Originally this cup was machined from free cutting copper rod, but this proved costly due to the high rate of scrap from the machining operation and the relatively high cost of turning out the machined part.

At this point Revere Technical Advisors got together with the engineers of the manufacturer and the possibility of an impact extrusion was discussed. Revere T.A.s in turn contacted suppliers of impact extrusions to see whether or not such extrusions, in copper, could be produced economically and to the demanding specifications required. After testing many types of copper rod it was found that the cups could be impact extruded to meet the exacting hardness required by the specifications.

The impact extruded cups were tested and re-tested in comparison with the machined cups. Many problems involving temper, grain size and control of the chemical composition of the copper rod for impact extrusions had to be solved.

Finally, after repeated tests of samples it was revealed that copper cups extruded from a specific type of copper rod recommended by Revere, were

superior from a standpoint of both quality and price.

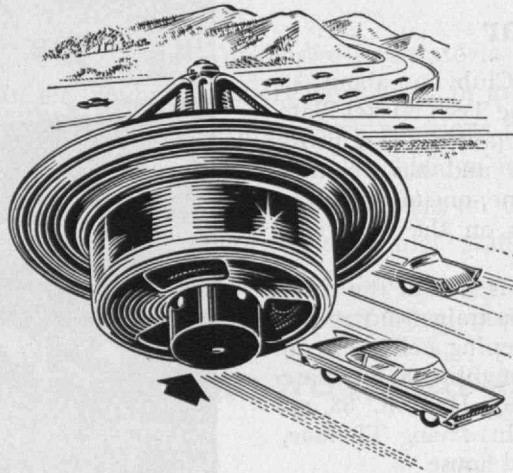
During the months of development, Revere personnel, on the one hand were working with prospective suppliers of the copper cup and on the other hand coordinating the overall effort with the engineering and purchasing departments of the manufacturer. This, of course, kept them abreast of developments by assisting with the preparation of a material specification that would assure a quality product.

In addition to the Copper Cup, Revere also supplies 70/30 Brass Strip from which other parts of the thermostat are fabricated.

Said the purchasing agent, "When you ask Revere for help you get results. They are so well organized all over the country that they can really do something for you. That's why, through their help on our special type thermostat, we are able to say

that it is the most accurate and trouble-free stat ever designed to operate in pressurized cooling systems. The stat will perform accurately and efficiently against high pump pressure and is not affected by action of the pressure cap."

This is still another case of how Revere, a supplier, working with still another supplier, was able to help its customer produce a superior product for less money. And, because practically every industry you can name is able to cite similar instances, we suggest that no matter what your suppliers ship you, it would be a good idea to take them into your confidence.



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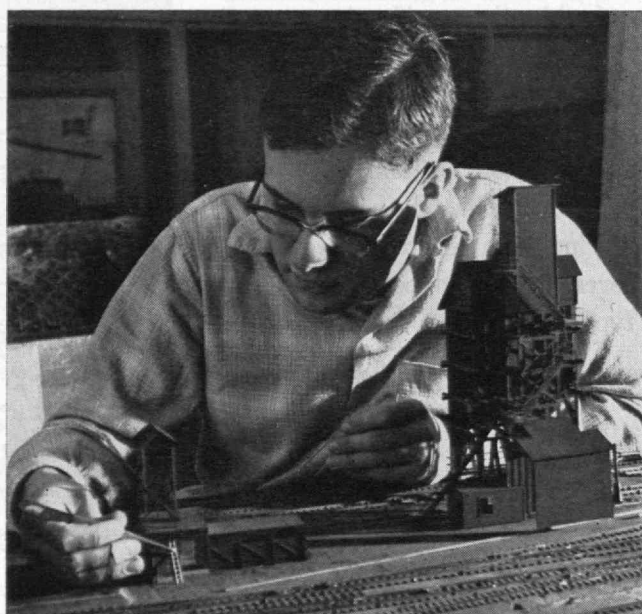
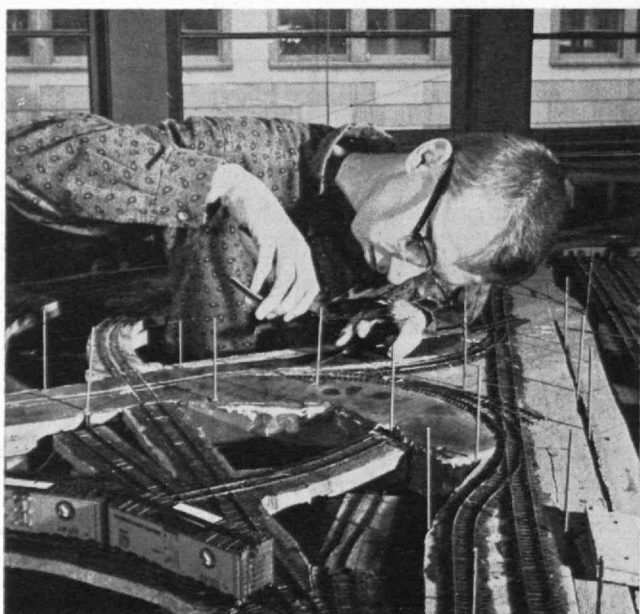


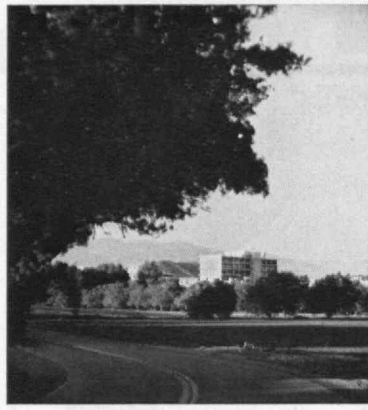
The Tech Nickel Plate Is Having a Good Year

THE M.I.T. Model Railroad Club has about 30 members now and is keeping the Tech Nickel Plate well automated. John Pryke, '62 (above), is a prize-winning locomotive-model maker and has about a dozen and a half engines on the line; one of them, the 2-8-8-4 articulated, is seen above on the Schneider Junction Bridge.

Alan Kotok, '62, club treasurer, is seen at the right working on the NX, which routes a train from an entrance to an exit automatically. Keeping a close eye on what he is up to is Malcolm Laughlin, a graduate student. Below (at left) you see Roy Hamlin, '63, repairing a trolley wire, and (at right) Irving Thomae, '62, working on his new model sand house.

Robert Kerber, '60, is the club's president; Arthur Delagrang, '61, is vice-president; and Charles Niessen, '62, is secretary. Curtiss Wiler, '63, took the pictures.





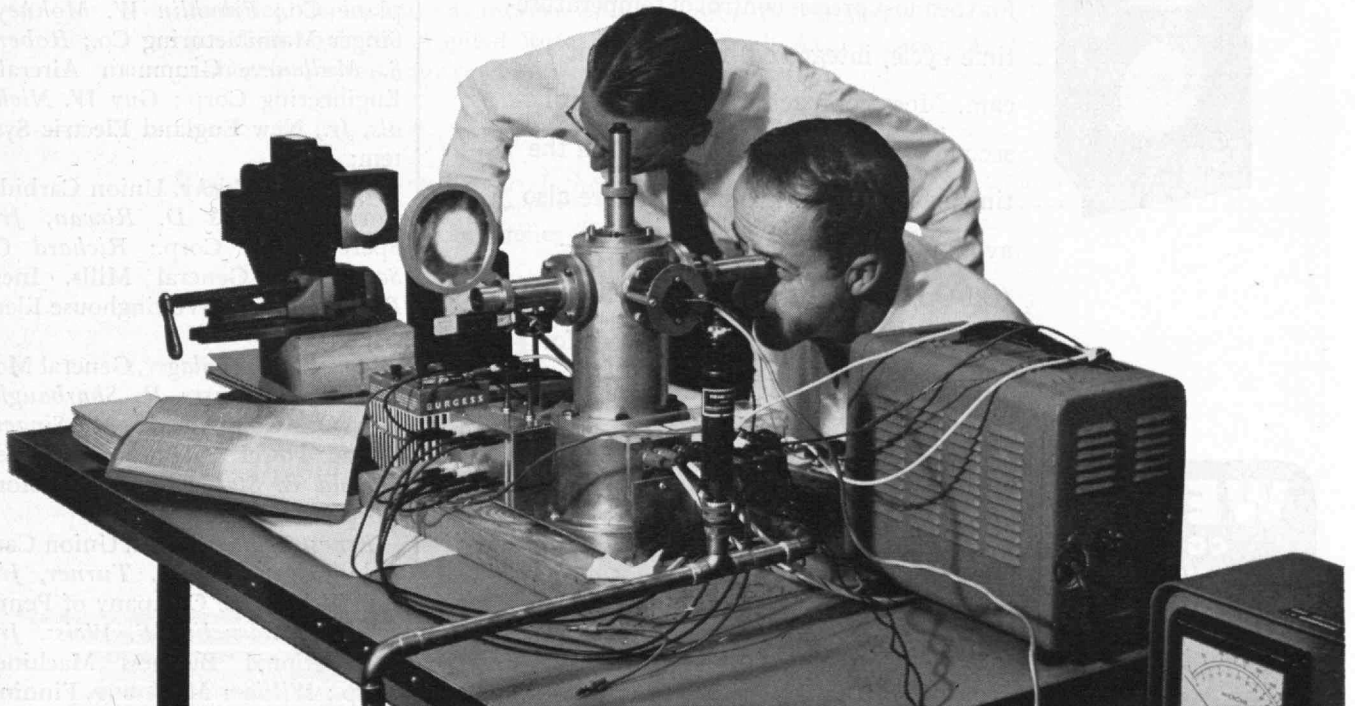
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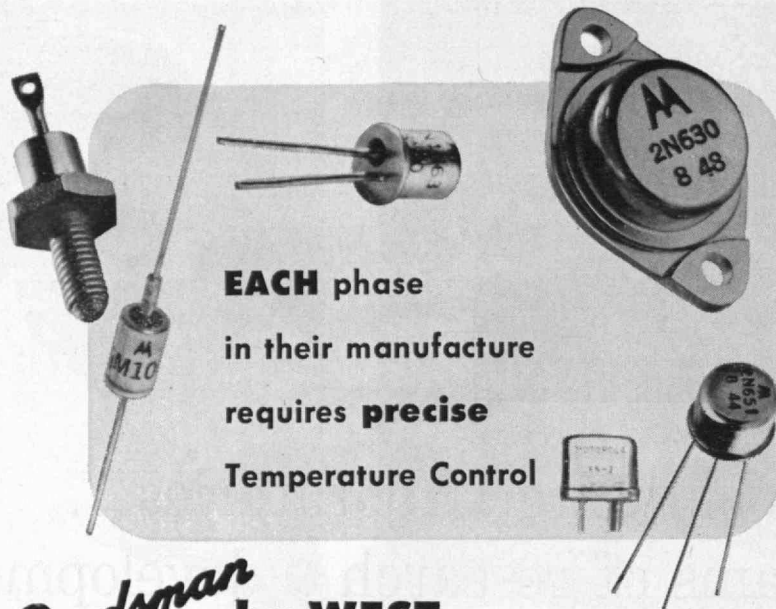


THE RAMO-WOOLDRIDGE LABORATORIES

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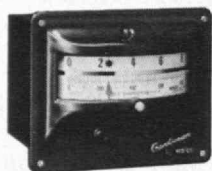
An electron device permits scientists to study the behavior of charged dust particles held in suspension.



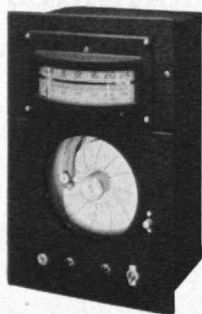
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(Concluded from page 10)

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Stuart M. Frey, Ford Motor Co.; *Anthony F. Gabrielle*, American Electric Power Service Corp.; *Paul O. Gaddis*, Westinghouse Electric Corp.; *Clingman F. Grisette*, Eastman Kodak Co.;

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Dean L. Kellogg, U.S.N. Fuel Supply Office; *Theodore J. Lakoski*, International Business Machines Corp.; *Maurice J. Laurier*, General Dynamics Corp.; *Joseph L. Lelli*, General Motors Corp.;

Elmer N. Lenk, Western Electric Co.; *Philip W. Lett, Jr.*, Chrysler Corp.; *Kenneth I. Lichti*, Department of the Navy; *Ted D. Mason*, Atchison, Topeka & Santa Fe Railway Co.;

Wesley M. Maulden, Boeing Airplane Co.; *Franklin W. Mohney*, Singer Manufacturing Co.; *Robert S. Mullaney*, Grumman Aircraft Engineering Corp.; *Guy W. Nichols, Jr.*, New England Electric System;

Joseph F. Rocky, Union Carbide Corp.; *Thomas D. Rowan, Jr.*, Sperry Rand Corp.; *Richard C. Samuelson*, General Mills, Inc.; *Peter M. Sarles*, Westinghouse Electric Corp.;

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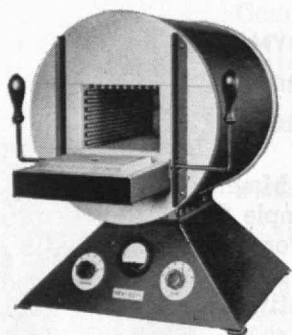


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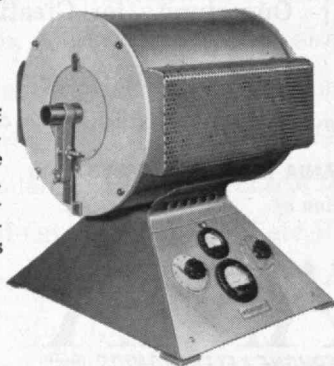
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Talk of Our Times

(Continued from page 20)

Mass Communication Research

In testimony given before the Federal Communications Commission last winter, Ithiel de Sola Pool, Professor of Political Science at M.I.T., pleaded for research regarding matters pertinent to the solution of America's radio and television problems. Professor Pool said in part:

NEVER BEFORE has a country had the facilities for lifetime education of its entire public. Never before has a nation been able to bring the fruits of culture to its whole citizen body. Never before has a democracy had the wherewithal to bring all its citizens into a nationwide town meeting where experience with the great events of world affairs can come right into everyone's home. I hope that we as a nation will not miss this opportunity. . . .



The FCC should have a large research budget; one in the millions. It should do research itself and it should make research grants and contracts. It should be seeking to get the knowledge it needs to turn our current dilemmas into soluble problems.

This suggestion is a very moderate one. Research is one of the best and most lenient forms by which government can seek to guide private activities in desirable directions. In agriculture, for example, one way in which we seek to direct farmers to better conserve our natural resources is by financing research. We have our scientists seeking to find ways in which farmers can engage in conservation cheaply and profitably to themselves. The FCC could similarly help our communications industry by finding better ways to achieve the goals we all share.

This is a proper role for government. Private audience research is necessarily going to focus on audience ratings for the recruitment of advertisers. Research is expensive and only that sort of research, and skimpily done at that, is likely to justify its cost for private stations. If we are going to get research oriented to reforming our telecommunications system so as to raise the general standards of our citizen body, it must (just like public schools) be publicly supported.

It is hard to know whether research will pay off. It is always impossible to know that in advance. But even if it helped us solve a very small part of our present dilemmas it would be worthwhile. The decisions this Commission makes affect hundreds of millions of dollars. A research program spending a few millions would seem to be an essential precaution.

The kind of research to be done would be very varied. It should include natural science research, for some problems could be solved by technological breakthroughs. For example, it is now uneconomic in most markets to have a TV station or two which specializes on art, opera, and serious drama. There aren't enough viewers. But with a satellite relay system

Freshman Is Honored for Bravery



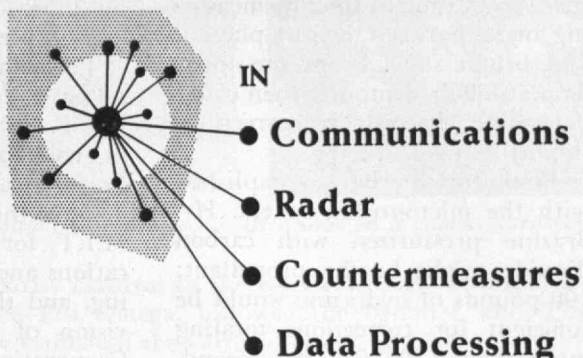
FOR DIVING into the icy waters of the Charles River last November to rescue an elderly man who had leaped from the Harvard Bridge, Jeffrey Hogge, '63, of Vancouver, B.C., has received a medal from the Massachusetts Humane Society. The society's president, Francis Higginson, presented it to him in the office of President Julius A. Stratton, '23, in recognition of his courageous action.

one such specialized station could serve the whole nation and acquire a market of several million faithful viewers. Just think what it would mean if a commercially viable station or two of that sort were available to everyone in the country.

But in addition to natural science research, the FCC should engage in extensive research in the psychological and behavioral sciences. Such research could help shed light on unanswered questions as to what raises tastes and what lowers them; what on the air harms our children and what helps them; what people really want out of radio and TV and what they don't. In a democracy a regulatory agency controlling what the people can view and hear seems to me almost under obligation to learn what the people want, and to learn it for itself, not accepting the biased testimony of commercially shaped research. In a democracy too, we can do no better in our media than the people themselves are ready for. But that is not a static limitation. American democracy has always believed in education and self-betterment. The public agency responsible for this electronic medium has an obligation aggressively to study the potential of the medium in our society. The need for such study is not fulfilled by men testifying at hearings about matters on which no one possesses real knowledge. It can only be fulfilled by the vigorous pursuit of scientifically tested knowledge.

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*A brochure more fully describing MITRE
and its activities is available upon request.*

How to Study Mars

(Concluded from page 30)

the fuel tank, and in the rear is the pod containing the pay load.

If such a vehicle were put into an orbit that would intercept the orbit of Mars at an appropriate time, it could proceed on its own. Its self-contained guidance system could determine its position in space from time to time by measuring angles between the sun, planets, and bright stars. From pre-stored data, its 30-lb. computer then could determine what velocity corrections should be made.

These might be accomplished with the micro-rocket system. Hydrazine pressurized with carbon dioxide might be the propellant; 100 pounds of hydrazine would be sufficient for corrections totaling more than 2,200 feet per second, which would be adequate for round trips to Mars or Venus.

The attitude-control system would include flywheels to apply torque. The solar vanes would reduce the requirements of these wheels. The flywheels would servé, too, to aim

the camera at the target as the ship passed it. The gravitational field of the planet would put the vehicle into a new orbit that would direct it back toward earth, and the same procedures would be followed on the homeward journey as when the vehicle was outward bound.

As it came back into the earth's atmosphere, the re-entry vehicle would be discharged. This would deliver the camera containing the fine-grained, slow film bearing the desired picture.

The detailed study of how all this might be done was made by the M.I.T. Instrumentation Laboratory in collaboration with the Avco Corporation for the re-entry vehicle designs, the Lincoln Laboratory of M.I.T. for the study of communications and pre-impact radar tracking, and the Reaction Motors Division of the Thiokol Chemical Corporation for the consideration of the micro-rocket for velocity corrections. Among Alumni who were active in the project were: Richard H. Battin, '45, Philip N. Bowditch, '46, John Dahlin, '52, Paul R. Karmel, '57, J. Halcombe Laning, Jr., '40, Richard E. Mar-

shall, '51, Leon J. Ricardi, '54, Harold H. Seward, '54, and Milton B. Trageser, '51.

"As difficult as the problems of long-term reliability and of achieving the necessary operating life at first seem," Mr. Trageser has written, "it is my feeling that the requirement for perfection in conducting a complex interplanetary operation is the most difficult technical problem. This feeling results from observing that an interplanetary probe can operate in a very relaxed manner, and that its equipment is not exercised excessively. At the same time, the probe is a complicated device. The program in the computer must operate the probe on its journey, relying on the accuracy of the analysis and the execution of the relationships between the computer, its components, and the communication channel if one is effectively used. All of this work must be carried out impeccably, without error in sign, wiring, or placement and interpretation of data. Yet, there is no really complete method for checking the system out without actual space flight."

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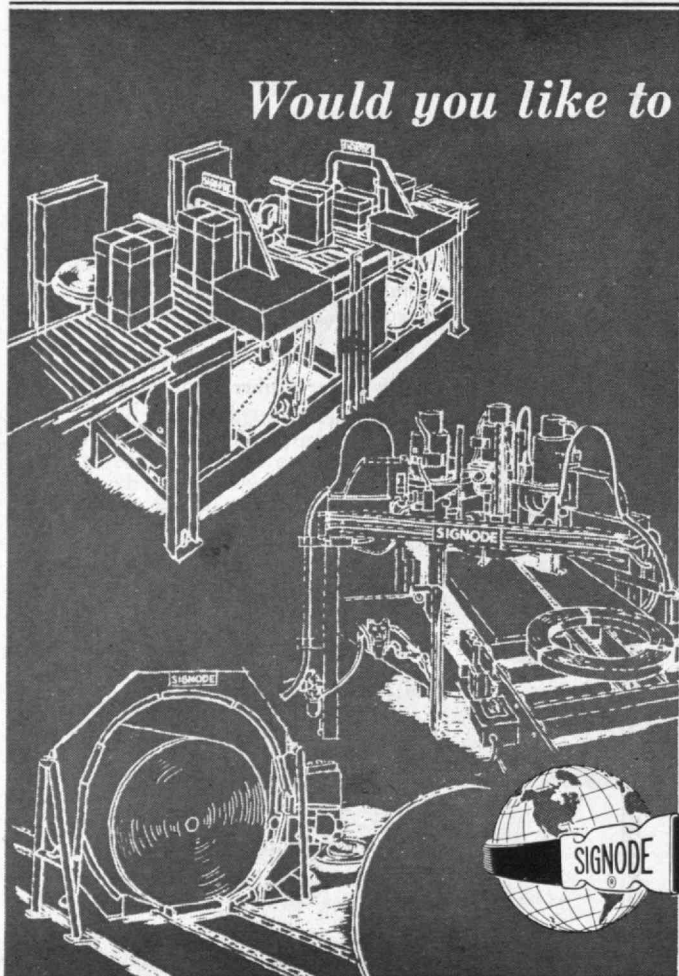
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MORE PARENTS than were expected visited M.I.T. on the April "Parents' Weekend" arranged by students led by Jerome H. Grossman, '61, and Frederick A. Jancewicz, '61. Displays of students' work, demonstrations by the Faculty, special lectures, and a program of athletic and musical events kept hundreds of interested visitors busy. Each of the Institute's five schools had a luncheon, and James R. Killian, Jr., '26, Chairman of the Corporation, addressed a capacity crowd at a banquet on Saturday night, April 23.

A charity carnival in the Rockwell Cage, arranged by Alpha Phi Omega, followed the banquet, and *The Tech* estimated the carnival crowd at 2,700.

In addition to such favorite attractions as the Tech Nickel Plate railroad (see page 34), a display of space vehicles, missiles, and jet engines in the lobby of the main entrance intrigued both the parents and their student guides. More than two dozen industrial concerns helped the Department of Aeronautics and Astronautics arrange this exhibit.

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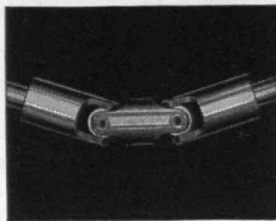
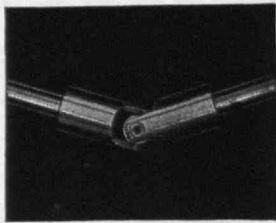
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Books

THE UNITED STATES IN THE WORLD ARENA, by W. W. Rostow, Professor of Economic History at M.I.T.; Harper & Brothers (\$8.75). Reviewed by Louis M. Lyons, Curator of the Nieman Foundation at Harvard University.

THIS IS a searching examination of America's capacity to meet the crucial test of her position in the world. Professor Rostow first reviews the history of our performance in past crises, with emphasis on World War II, the depression, and the postwar challenge of the Soviets. He delves beyond economic and political analysis to reflect on what he calls our "national style," that is, our characteristics as a people, conditioned by our history and continental environment. He sees our national style as the strategic key to our history, determining our response and performance on great national issues. To these reflections, he brings some 20 years of an economist's studies, reinforced by much experience in public programs.

Rostow sees our problem primarily in terms of keeping the Soviets from dominating the world. But essential to this is imaginative support for and intelligent influence upon the rapidly rising new and uncommitted nations. To meet the test that world pressures now pose will require a shift from our Nineteenth Century style of a self-contained people, to one with the will and understanding to mobilize its strength, including its intellectual resources, to see the world whole and to deal adequately with its urgencies. In brief, he believes we can manage it. He rests his optimism largely on the strength of America's "sense of democratic mission." But it is going to take effective adjustment to new conditions that will demand more of our national leadership, and more to support the national interest, both for our present protection and to insure a satisfying future.

There have got to be changes, notably in our attitude toward public versus private activity, as Rostow sees it; and it is going to take a lot of doing to bring them about fast enough to shape a world that we and our children are going to want.

Our present position is handicapped, in Rostow's book, by the failure in recent years to put enough of the national capital into defense and social needs. His nonpartisan realism adds effect to his explicit criticism of the Eisenhower administration's commitment to reducing the role of the federal government and its budget, in a period when world conditions demanded an opposite policy. His most precise prescription for our need is the necessity to allocate more of our wealth to the public sector and apply austerity to our private consumption. This parallels J. K. Galbraith's analysis; but for Rostow it is not in terms of an affluent society, but of the inexorable demands of global responsibility. But economics is only part of the answer. Rostow deals provocatively with the human factors, such as the es-

sential role of the individual, even in a bureaucracy, and the effect of traditional habits and individual choices upon the vitality and performance of the nation. A key to his requirements for a successful national future is that Americans be candidly informed of crises by their leaders, and induced to the fullest possible participation in national policy.

This is a tightly written but wide-ranging book, free of technical jargon, with a relaxed style that provokes hard thinking on the practical answers to the necessary evolution of the American society.

THE BIRTH OF A NEW PHYSICS, by I. Bernard Cohen; Doubleday and Co., Inc. (95 cents). *Reviewed by Nathan Sivin, '52, of Harvard University.*

"ODD AS it may seem, most people's views about motion are part of a system of physics that was proposed more than 2000 years ago and was experimentally shown to be inadequate at least 1400 years ago." So begins this new work by I. Bernard Cohen, Professor of the History of Science at Harvard University. By his long experience at planning and teaching a "Historical Introduction to the Natural Sciences" course in the General Education Program at Harvard, he is uniquely qualified to contribute to the Physical Science Study Committee's series of books, "within the grasp of the young student or layman."

This new physics was born from an old one; the book begins with a rapid survey of Aristotelian physics and Ptolemaic astronomy. The remainder of the book is built around the work of Copernicus, Galileo, Kepler, and the final grand design of Isaac Newton. The scientific achievement of each of these innovators is assessed with some precision, in the light of the greatly expanded historical knowledge of recent years. Now that more is known of medieval science, for instance, we can see that Galileo was far from being the first outspoken critic of Aristotle's mechanics — which, as Cohen shows, does not diminish his stature a whit. Similarly, lucid discussions of the limitations of Copernicus' and Kepler's systems of the universe, and of the parallel work of Newton's contemporaries, make the whole context of the development of mechanics clearer.

This book is, most of all, interesting. An informal style, the use of simple and effective diagrams and photographs to illuminate technical points, and a number of illustrations of the effect of the new physics on the contemporary imagination, appeal to those who are primarily interested in the cultural implications of the scientific revolution. A not unrigorous treatment of theoretical issues, and numerous quotations from the works of the four men, recapture, especially for those readers who love physics, some of the excitement of innovation.


LOW-LEVEL IRRADIATION, Symposium Volume No. 59 of the American Association for the Advancement of Science (1515 Massachusetts Ave., N.W., Washington 5, D.C.; \$3.75). Robert A. Dudley, '51, contributed the section on the natural and artificial radiation background of man to this effort to reduce public confusion about global fallout and implications of nuclear war.

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Institute Yesteryears

25 Years Ago . . .

ON JUNE 3, 1935, there took place the Institute's *first* Alumni Day, the arrangements for which had been entrusted to a committee of the Association capably chairmanned by Hamilton L. Wood, '17.

In the morning came an "Alumni Institute of Professional and Industrial Progress," which took the form of round-table discussions participated in by staff members of the various Departments, including a special symposium to mark the 50th anniversary of the granting of the first degree in Electrical Engineering.*

There followed group luncheons of the various Courses, and a special luncheon tendered by President Karl T. Compton for attending Honorary Secretaries and the Presidents and Secretaries of M.I.T. Clubs; and in the afternoon opportunity was provided for inspection of the laboratories and other newer Institute facilities.

The day closed appropriately by the holding of the 60th Annual Banquet of the Alumni Association at Symphony Hall, as a prelude to the Pops.

¶ The next morning at Symphony Hall, commencement exercises marked the graduation of the Institute's 68th class. Of the total of 560 degrees awarded, 380 went to bachelors of the Class of 1935 and 180 to candidates for advanced degrees, namely: 25 doctorates of philosophy and 11 of science, 142 masters of science, and two certificates in public health.

The academic procession was led by Alexander Macomber, '07, who had been the 35th President of the Alumni Association in 1928-1929; and next came President Compton and the commencement speaker, Dr. Isaiah Bowman, President-elect of Johns Hopkins University. At the head of the long procession of de-

*To Frank A. Pickernell, '85, who later became Chief Engineer of the American Telephone and Telegraph Company; and who presided at the organization meeting of what is now the M.I.T. Club of New York, held July 8, 1895, at the Central Roof Garden, No. 143 Liberty Street.

gree candidates marched Walter H. Stockmayer, President of the Class of 1935, and its three elected marshals: Hal L. Bemis, Henry Fiske King, and Donald C. Gutleben.

On June 24, the Institute mourned the passing of Isaac White Litchfield, '85, for 30 years Secretary of his class and from 1908 to 1917 the fourth editor of *The Review*.

50 Years Ago . . .

ON JUNE 5, 1910, President Richard C. Maclaurin was being congratulated upon the occasion of his 40th birthday.

On June 7, 1910, at Huntington Hall in the Rogers Building on Boylston Street, there was held the graduation of the Institute's 43d class. Of the total of 273 degrees awarded, 251 went to bachelors of the Class of 1910 and 22 to candidates for advanced degrees. Of the 273 degree recipients, eight came from foreign countries, and 135 (nearly half) from Massachusetts.

There was no commencement speaker but, as *The Review* noted, "Representative theses from each of the [eleven!] Courses were read by the best student in each Course."

75 Years Ago . . .

AS THE year 1884—1885 drew to a close, the crusading editor of *The Tech* entered a plea on behalf of the incoming Class of 1889. "At the beginning of each year," he wrote, "there is a great worry and loss of time to students, especially to freshmen coming from a distance who are unfamiliar with Boston, in selecting rooms and boarding-places for the winter."

"The plan adopted by the Faculty, of having nothing to say or do in this matter, has great advantages; . . . but its drawbacks are manifest.

"According to the Catalogue, good board may be obtained in and around Boston for six to eight dollars a week, but the majority of students find that it amounts to considerably more than that. . . . Most of the 'six to eight dollar' places convenient to the Institute deteriorate rapidly as to food; so wise boarders get a good room and take their meals out, and can change rapidly when the fare grows tiresome.

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(Concluded on page 46)



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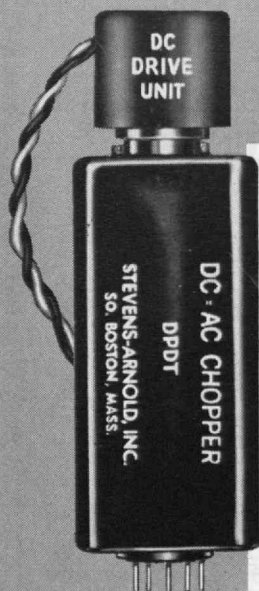


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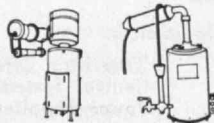
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Institute Yesteryears

(Concluded from page 44)

system over dormitories is that living in small families has a better moral effect than living together in large numbers. Although this is so, it must be remembered that it is only a lucky few who get into families with whom they desire to become intimate. . . .

"The erection of dormitories where cheap, comfortable rooms and good fare can be obtained seems to be the best provision [but] if, for any reason, dormitories are not feasible, a bureau of information ought to be established at the Institute, where a student can get reliable references; thus loss of time may be prevented."

92 Years Ago . . .

IN JUNE, 1868, 13 members of the Institute's first class were graduated—one in Mechanical Engineering, five in Civil and Topographical Engineering, six in Geology and Mining Engineering, and one in Science and Literature. The form of their diplomas witnessed that each was a "Graduate of the Massachusetts Institute of Technology in the Department of"; for not until three years later was the designation "Bachelor of Science" adopted.

These historic—and fortunate—13 were not subjected to formal commencement exercises; they obtained their diplomas simply by calling at the Institute office.

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and the prophet replied:
*"It is well to give when asked, but it is
better to give unasked, through understanding."**

Gifts by Will

TO THE

Massachusetts Institute of Technology

The tale is told of Almustafa, the prophet, who, having awaited for many years the ship that would return him to the place from whence he came, was making the final descent to the shore when the folk of Orphalese crowded about him. They besought him before departing to "disclose us to ourselves, and tell us all that has been shown you of that which is between birth and death."

With words of wisdom, an answer appropriate was given to the woman holding a baby, to the ploughman, to the merchant. Begged one, "Speak to us of GIVING," and the prophet replied:

"It is well to give when asked, but it is better to give unasked, through understanding;

And to the open-handed the search for one who shall receive is joy greater than giving. All you have shall some day be given;

Therefore give now, that the season of giving may be yours and not your inheritors'."

Through the years the prophet's words have held true, for even today he who "through understanding" includes the MASSACHUSETTS INSTITUTE OF TECHNOLOGY as a beneficiary in his will can experience thereby a two-fold satisfaction. The successful culmination of his search for a worthy recipient and the anticipated results his generosity will assist in accomplishing. These satisfactions give an added value to the span of man's days and project his usefulness to his fellowmen far into the future.

The Massachusetts Institute of Technology because of the high quality of the education given its students, its effective research work for aiding America in peace as well as in war, and the high character of its governing body and academic staff qualifies as an institution for serving our American ideals for the present and in the years to come.

But the search, the finding, and the anticipated accomplishments are not enough; for without the properly-worded record, man's plans for the future may go awry. Hence the prophet's importuning, "— give now," should be heeded. The giving need not be an immediate physical transaction, for written directions replace the spoken word when the speaker is no longer present, and a donor can frequently make by will a gift which is larger than he can make while living. Truly, *"it is well to give when asked, but it is better to give unasked, through understanding."*

A booklet "Gifts by Will," outlining different forms of bequests to M.I.T., is available to you or to your attorney by writing to:

Director of Development

Massachusetts Institute of Technology

Cambridge 39,

Massachusetts

• "The Prophet" by Kahlil Gibran

Club Notes

Women's Association Hears About New Dorm

An anonymous pledge of \$1,500,000 for construction of a women's dormitory has been received by M.I.T. This pledge was announced by President Stratton at the April 11 meeting of the Women's Association. Members and guests, including 40 women students, were at the Faculty Club dinner to hear Dr. Stratton talk about the Institute's future plans for women students. They were delighted to hear about the preliminary plans for the new dormitory. The new structure will house between 120 and 150 coeds and will include facilities for study, recreation and dining. It will be built on a site fronting the Charles River, close to the M.I.T. Chapel and Kresge Auditorium.

At the same meeting Mrs. Robert C. Dean, '29 Vice-president of the Association, disclosed that an award of \$100 in recognition of academic achievement would be presented in May to Miss Karleen C. Klages, a physics student from Fort Lauderdale, Fla. The award is given to a woman in the junior class.

Karleen Klages is just one of the many outstanding girls now enrolled as students at M.I.T. Among this year's seniors, for example, Betsy Schumacker of Devon, Pa., is an outstanding swimmer, holding two Middle Atlantic women's records and one National Junior women's record. Linda Greiner of Barre, Vt., was recently elected the first woman chairman of the student newspaper, while Susan E. Schur, Flushing, N.Y., is general manager of the M.I.T. year book. Sheila M. Evans, Tacoma, Wash., was the first woman undergraduate elected to Tau Beta Pi, and she and Linda Greiner were the first women selected for membership in Beaver Key, honorary junior class society. Patricia Andre, South Hempstead, N.Y., first woman to join the Institute's Air Force R.O.T.C. unit, has already published a scientific paper in collaboration with a physics professor. — ANNA BAILEY '54, Secretary, 61 Columbia Street, Brookline, Mass.

Dr. Ingersoll Guest Speaker At Southern California

M.I.T. Alumni from the southern California area met Thursday, March 24, at the Mona Lisa Restaurant in Los Angeles to hear an enlightening talk by Dr. Alfred C. Ingersoll, the new dean of engineering at the University of Southern California. The meeting was preceded by a cocktail hour. Dr. Ingersoll's talk was concerned with the severe problems faced by various engineering schools, and the proper development of quality engineers and scientists for the future. A question and answer session followed his talk.

Ray St. Laurent, president of the Class of 1921, and Mrs. St. Laurent were pres-



The M.I.T. Club of Central Massachusetts and guests met on March 10 to hear Dr. Samuel A. Goldblith '40 of the M.I.T. Department of Food Technology, speak on "Food Technology in the Space Age." Pictured above are, from left to right, Arthur Lowery '32, Chairman of the meeting, Haskell R. Gordon '38, Dr. Goldblith, and Dr. Leo T. Doherty, Superintendent of Schools in Worcester.

ent. Mr. St. Laurent addressed the group regarding his recent experience at the M.I.T. Club of Mexico's 50th anniversary observance. Also attending the meeting from the Los Angeles area were: Sheridan Osborne '26, Mr. and Mrs. Michael Oglio '46, Charles M. Walker '49, Ted Thal '48, Donald G. Gilbertson '53, Mr. and Mrs. Richard J. Sholtz '22, Richard S. DeWolfe '36, Duane D. Rodger '48, Mr. and Mrs. Albert Livingston '49, Mr. and Mrs. Raymond Stringfield '15, Samuel J. Losh '54, Mr. and Mrs. Edward Zoolalian '56, Howard Phillips '57, Robert Cornforth '37, Mr. and Mrs. Jack Barriger '49, Bob Copsey '44, Hiram Beebe '10. — ALBERT A. LEVINGSTON '49, Secretary, 3850 Wilshire Boulevard, Los Angeles, Calif.; LOUIS YOUNG '50, Assistant Secretary, 2234 South Spaulding Avenue, Los Angeles 16, Calif.

M.I.T. Baltimore Club Host To Dr. Louis Witten

The M.I.T. Club of Baltimore held a very successful meeting at the Hotel Staford on Thursday, March 31. It had been planned for March 3, but was postponed at the last minute because of a blizzard. We were fortunate to have as a most stimulating speaker, Dr. Louis Witten, from the Research Institute for Advanced Studies of the Martin Company. He made the subject of relativity reasonably clear and fascinating, with a light touch of humor as well. The Martin Company generously sponsored the attendance of 18 teachers from local secondary schools. There was a good Alumni representation of over 50, many of whom had not been with us at recent meetings. Our final meeting for this year is scheduled for May. We hope that once again we shall have a good turnout. — JANE S. R. STEINER '40, Secretary, 5219 Putney Way, Baltimore 12, Md.

Rochester Club Announces Plans for Annual Meeting

Charles F. Payne '33 was appointed vice-president to replace Howard S. Gleason '43 who is leaving Rochester. The next meeting of the club will be the annual meeting to be held at Hopkins Point Cabin, Saturday, September 24. Please save that date. Members will be pleased to note that Hopkins Point Cabin has been electrified. — ARNOLD MACKINTOSH, JR., '44, Secretary, 164 Glen Haven Road, Rochester 9, N.Y.

M.I.T. Club of Hawaii Host to the Killians

The M.I.T. Club of Hawaii was host to Dr. and Mrs. James R. Killian, Jr. '26 at a reception and dinner on March 2, 1960. The Killians stopped overnight in Honolulu on their way home from their recent round-the-world trip.

Twenty-six Alumni and their wives, including members of classes as far back as 1901 and 1906, enjoyed the privilege of hearing Dr. Killian's remarks on science and technology education for the future. — ROBERT S. GORDON '38, Secretary, Castle and Cooke, Inc., P. O. Box 2990, Honolulu, Hawaii.

Northern New Jersey Club Has a Ladies' Night

The annual Ladies' Night and dinner meeting was scheduled for May 10 at the Hotel Suburban, East Orange, with Charlotte Montgomery, whose column appears in *Good Housekeeping*, as the speaker on "Mrs. Average Consumer and Her Habits." — JAMES J. SHYNE '43, Secretary, 21 Small Avenue, Caldwell, N.J.; HOWARD E. MILIUS '38, Assistant Secretary, 9 Tuxedo Place, Cranford, N.J.

Long Island Section (New York Club) Elects Officers

The Long Island Section held its annual meeting at the end of March, nominating and electing the following officers for next year: Ralph Krenkel'46, Chairman; Henry Duncan'32, Vice Chairman; Bob Franklin'34, Secretary; Frank Doyle'34, Don Gittens'35, Ken Lish'40, and Al Wu'40, Directors for 1960-1963, and by special appointment Dick Scheuing'47 to serve as Director for one year. The meeting was held at Milleridge Inn, Jericho, L. I., with cocktails compliments of Republic Aviation and Grumman Aircraft. An excellent after-dinner talk was presented on "Food Science and Technology in the Space Age" by Professor Samuel A. Goldblith'40 of the Food Technology Department at the Institute. Dr. Goldblith discussed the evolution of food technology and projected its importance into the future in space travel, as we stand on the threshold of this new mode of transportation.

The Long Island Section has one more important activity planned this spring, a tour of the Brooklyn Navy Yard in the latter part of May. This tour promises to be as inspiring and stimulating as last year's successful tour of the Brookhaven National Laboratories. Westchester will follow with its traditional annual spring golf outing in early June, to be held at the Scarsdale Country Club, as in previous years. Prizes will be awarded to golfers, high and low scores, and others, at the dinner meeting which follows golf. Ed Goodridge'33, will be chairman of the day's activities.

The club in New York will hold its annual meeting on May 16 at the Hotel Biltmore for the election of next year's officers. A new feature of the annual meeting will be a guest speaker, Dr. A. B. Kinzel'21, Vice-president of research, Union Carbide Corporation. Ed Edgar'35, President of the club, will preside over the meeting and also act on the committee to make preparations. Jerry Schooler'55 will chairmen the committee with support from Bill Correale'24, Dave Broudy'22 and Jim Margolis'52. Other club activities including membership, dining facilities, the *News Bulletin*, and additional services

and privileges are under serious discussion with planned follow-up. The fruits of these efforts should begin to show during the remaining months of this year and next year. — JAMES M. MARGOLIS'52, *Secretary*, 5 Fenton Street, Rye, N.Y.

Indiana Association Reviews Successful Season

The Indiana Association of the M.I.T. is winding up its 1959-1960 season in the near future. We started off the year on October 29 with a guided tour of the John Herron Art Museum. Preceding the tour was a roast beef dinner at which Dr. Wilbur D. Peat, Director of the museum, and also the guide for the evening was guest. Our second meeting on Wednesday, January 20, featured Mr. Herbert Minturn, a local patent lawyer, who delivered an illustrated talk about his favorite summer vacation spot—Maine—and Maine's staple—the potato. The meeting was held at the Continental Hotel and included cocktails and dinner.

On April 14 the group was to have taken a tour of a local TV color station, WLW-I. In June we shall undoubtedly finish up with our very popular picnic. . . . Our attendance has been excellent and we are looking forward to an even better year in 1960-1961. — PAUL HOTTE'42, *Secretary*, 6259 Graham Road, Indianapolis, Ind.

Dean and Mrs. Burchard Guests of Japan Association

The M.I.T. Association of Japan gave a dinner party in honor of Dean and Mrs. John E. Burchard'23 on March 29, 1960, at the Japan Industry Club, Tokyo. Dean Burchard spoke to us about the recent activities at M.I.T., and also indicated the magnitude of the Centennial next year. We all enjoyed the meeting.

Yoshinori Chatani'22 was absent due to his condition, but next time he will surely be able to join us. We have failed to see Masaru Kametani'25, who seems to be enjoying his status of grandfather at home. . . . Our association is always happy to welcome visitors from Cambridge. — SHIKAO Ikehara'28, *President*, Tokyo Institute of Technology, Tokyo, Japan.

Professor Shrock to Speak At Dallas Club Meeting

The M.I.T. Club of Northern Texas in Dallas will be holding a meeting on Monday, June 13, at which Professor Robert R. Shrock, head of the Department of Geology and Geophysics at M.I.T., will be the guest speaker. Professor Shrock will also be attending an Industrial Liaison Office Symposium which is to be held in Dallas.

Deceased

ARTHUR K. HUNT'85, March 13*
MISS ELIZA P. HUNTINGTON'85, March 24
RALPH SWEETLAND'88, March 3
CARLETON A. READ'91, no date given*
JESSE F. JOHNSON'92, October 16, 1959*
JOHN A. MCILVAINE'96, February 12*
RICHARD T. GIFFORD'99, February 13*
CHARLES T. LEEDS'00, March 20*†
FREDERIC I. MERRICK'00, February 23*
FRED W. CLAFLIN'01, January 15
ROGER W. WIGHT'01, March 16*
WALTER H. ADAMS'03, March 8
ARTHUR J. CAVANAGH'03, March 7
MRS. WILFRED A. PAINE'03, January 7, 1959*
SAMUEL E. ARMSTRONG'04, January 19, 1959*
FREDERIC W. CROCKER'04, January 29*
RALPH E. HADLEY'05, March 24*
CLARENCE E. CARTER'06, March 26*
LEON L. ALLEN'07, February 4*
JOSEPH W. L. HALE'08, March 29*
ERNEST J. H. WATERS'08, February 3*
RICHARD W. WILSON'08, August 26, 1959*
GEORGE M. GADSBY'09, March 29*
CHARLES A. DUNKEL'10, March 7
MAX C. MASON'12, February 23*
WALTER R. BYLUND'13, March 28
STANLEY H. DAVIS'13, February 29
RALPH D. BROWN'14, April 5*
MORRIS GOLDENBERG'14, October 28, 1959
F. HASTINGS SMYTH'14, April 16
JOSEPH GOLDSTEIN'16, July 25, 1959
JESSE A. RUBIN'16, October 10, 1958
HAROLD Y. KEELER'18, no date given*
WILLIAM W. PETER'18, March 31, 1959*
KENNETH REID'18, March 16*
BENJAMIN WEST'20, November 23, 1959*
CHRISTOPHER C. CARVEN'21, March 11
LELAND K. COWIE'22, January 28*
LEWIS L. HILL'22, February 14*
HAROLD L. A. ZAGER'22, March 22*
JONATHAN BROWN, 3rd'23, March 14*
W. ALEXANDER KLIKOFF'23, April 3*
FRANCIS MINOT'23, March 11*
ALAN P. CUMMINGS'24, March 4*
CECIL T. KELLY'24, January 22*
ROBERT VELZ'24, December 19, 1958
FRED J. DUNCAN'25, April 4*
NOEL H. MILLER'26, March 15
STANFORD H. SWORD'29, October 16, 1959*
WILLIAM J. CROWE'32, February 23*
JOSEPH J. WINKLER'32, April, 1960
DANIEL NORMAN'36, March 11
FRANK L. LANGHAMMER, JR.'41, March 17
EMILIO AGUILA'43, September, 1958
AUSTIN J. O'CONNOR, JR.'50, June 16, 1959
RAYMOND E. KING, JR.'52, February 16
HARVEY L. STEELE'56, February 21
ROBERT L. VOLZ'56, no date given
STANLEY W. JOHNSON'58, March 25

*Further information in class notes.
†See also 1906 notes.

The M.I.T. Club of New York

❑ Has permanent quarters in the Hotel Biltmore, opposite Grand Central Station in Manhattan.

❑ Is open for your use from 10:30 A.M. to 7:30 P.M. every week day.

❑ Has monthly class luncheons for every M.I.T. class, and a daily club table for those who otherwise would dine alone.

❑ Has a full-time secretary to make arrangements and greet guests for you, and an office to make room reservations at the Biltmore for you.

❑ Publishes monthly newsletters, a Club Directory, and has a full program of affairs of many types.

❑ Offers you all this for only \$10. a year plus \$2.50 tax.

Class Notes

'85

Arthur Kinsman Hunt, born in Portland, Maine, in 1864, died on March 13, 1960.

Educated in public schools in Portland and three years at a private school in Concord, N.H., he entered the Massachusetts Institute of Technology in 1881 with the Class of 1885. After leaving M.I.T. he returned to Portland and was associated with his father in the West India business. When his father died he became a partner in an old established firm of Portland bankers, and later accepted the vice-presidency of the Portland Trust Company. He was also a director of the Merchants National Bank of Portland, and a member of the Portland city government for three years.

In 1905 he came to Boston and was senior partner of a firm dealing in securities, and members of the New York and Boston Stock Exchanges. Mr. Hunt was a director of a trust company in Boston and for three years he was manager of the New York office of the then First National Corporation of Boston. He retired from business several years ago.

His memberships included the Union League of New York City, the New England Historical and Genealogic Society of Boston, The Country Club, Brookline, the Masonic bodies in his native city, and some genealogical societies. In 1935 he became secretary of the Class of 1885 and continued in this position until his death. — D. DE F.

'91

The following notice appeared in the *Boston Herald* on March 4, 1960: "Carleton A. Read, 91, professor of steam engineering at Worcester Polytechnic Institute for 25 years, died Thursday (March 3). He was a graduate of M.I.T. in 1891 and taught there for seven years. He also taught at the former New Hampshire State College before coming to Worcester Tech in 1908. He retired in 1934."

The last letter I received from Carleton was dated June 6, 1959: "I feel the trip for our class luncheon is too strenuous for me this year. I do get around in the neighborhood and putter about the yard — the doctor telling me I must exercise. My wife and I are very fortunate in that our three children can visit us quite often, in fact, some one of them nearly every weekend. The three grandchildren and six great-grandchildren visit off and on during the year."

Shortly after Carleton's death the first of two letters arrived from his daughter, Mrs. Eleanor Read Madison: "Dad had been failing since the middle of December

and was in a nursing home at the time of his death. Mrs. Read is recovering from a broken hip but expects to stay on in their home. Dad would have been 92 on April 23." And an excerpt from the second letter: "We were very glad that Dad was able to be at home for the day, on his 66th anniversary, January 23, of this year. He came by ambulance about 10:00 A.M. and went back to the nursing home at 8:00 P.M. His three children were there which pleased him very much. We did not include the three grandchildren and six great-grandchildren as we were afraid it would be too much for both Mother and Dad, but he had seen them all a few months earlier.

"He also saw the girl his one unmarried grandson is to marry this summer and had quite a talk with them. He seemed to approve very highly of the marriage and after that it seemed as if he thought his work was done. His biggest regret was that he could not be at home to take care of Mother. He seemed to think we three kids could take over, which we are trying to do. Nevertheless we are leaving all decisions to her and she expects to stay on in the home they had lived in since 1912. We are sure that is what Dad would have wanted."

After Carleton retired from teaching he continued to pursue his many outside interests. The following story was printed in one of Worcester's leading dailies in 1947 and concerns one of these interests: "Every time Professor Carleton Read rolls into a gas station, it causes a flurry of interest among the men who make automobiles their business. The professor, a gadget maker of distinction, has worked out some devices for his car that

in several instances put the big auto manufacturers to shame. In fact, it's doubtful whether you'll ever see a car that has such a complex array of lights and pulleys and switches. The point of every one of them is to make driving safer and to protect the life of the car. For example, there is a pair of lights which shines the instant the ignition key is turned if the emergency brake is on, or if the choke is pulled out. The brake light has since been copied on several new model automobiles, but the professor had his working long before the engineers in Detroit had gone beyond the drafting-board stage.

"The professor's pride and joy is a window shade device that covers the radiator in cold weather. He took an old curtain roller and attached a green oilcloth that had once been a tablecloth. Then he attached a piece of clothesline to the new 'shade' and ran it over a pair of pulleys to a point on the left end of the dashboard. . . . His most ingenious device now can be bought from dealers, but is seldom seen. It is nothing short of a burglar alarm. Any prospective thief who enters the professor's car will be dismayed to hear the loud baying of the car's horn — even before he gets in the door. Just under the hood Professor Read has suspended a small pendulum inside a ring. When the car is level, the wire holding the pendulum does not touch the ring; but when the car is tilted, the ring tilts with it, touches the wire, and sets off the horn. Most burglars, the professor thinks, wouldn't stay around long." — WILLIAM CHANNING BROWN, *Secretary*, 36 Foster Street, Littleton, Mass.

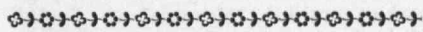
'92

It is the sad duty of the secretary to report on the passing of another of our classmates, Jesse F. Johnson, in Canaan, N.Y., on October 16, 1959. Johnson graduated with us in Course X but the secretary has no record of his career. — CHARLES E. FULLER, *Secretary*, P. O. Box 144, Wellesley, Mass.

'94

From time to time these notes have mentioned the long and painstaking research that Charles G. Abbot has been doing on the problem of long-range weather prognostication. On March 23 an AP dispatch in the *New York Herald Tribune* stated that a Smithsonian Institute scientist (none other than our Abbot) has ventured weather predictions for 32 cities from 1959 through 1967. His forecasts cover precipitation for each month, and also are broken down into four-month seasonal averages for the use of farmers. To quote: "This is the first time, so far as is known, that anyone has ventured to forecast the monthly rainfall eight years in advance for definite cities, stating the exact expected departures from the normal values."

While his report concerned only the 32 cities covered in his studies, Dr. Abbot



Happy Birthday

Among the Alumni of M.I.T. now there are 86 nonagenarians and 773 octogenarians. Birthday greetings are in order during June to five, twelve, and eight who are due, respectively, to celebrate their 90th, 85th, and 80th, as listed below with dates of birth:

June, 1870 — CHARLES H. MUHLENBERG'92, on the 1st; ARTHUR J. OBER'92, on the 4th; MRS. CAROLINE W. BARRETT'94, on the 9th; ERNEST S. TAPPAN'91, on the 24th; and EDWARD EARL'91, on the 25th.

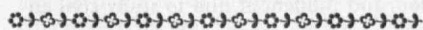
June, 1875 — JOHN E. BUCK'97, and J. THOMAS F. GLADDING'00, on the 1st; WILLIAM D. PARKER'97, and ERNEST J. CRONENBOLD'03, on the 11th; ALBION SHAW'98, on the 13th;

WALTER PAGE'98, on the 16th; GEORGE H. BOOTH'98, on the 17th; JERE R. DANIELL'97, and W. CHARLES DUNN'97, on the 21st;

ASHLEY B. WHITMORE'98, on the 24th; FRED B. DAWES'98, on the 27th; and EDWIN B. MEAD'99, on the 30th.

June, 1880 — GEORGE H. LLOYD'02, on the 3rd; CHARLES L. BATES'03, on the 10th; GEORGE A. HALL'01, on the 13th; WARREN C. TAYLOR'02, on the 17th;

ARTHUR C. MELCHER'00, and J. TYRRELL CHENEY'03, on the 26th; FRANKLIN M. CHACE'04, on the 27th; and EARL S. BARDWELL'06, on the 28th.



has also offered a general weather outlook for the country as a whole through 1966. This year (1960) he says will be a "rather well-watered one, and then following normal precipitation in 1961, should come pretty dry conditions in the winter and early summer of 1962. A long period of normal rainfall follows from the autumn of 1962 through to the summer and autumn of 1964. A very wet winter in 1965 follows, and fairly normal precipitation thereafter, except for a dry summer in 1966."

These are very interesting predictions, but we of the class may not be able to witness their verification. However, as the report adds, Dr. Abbot, who has had a pretty good batting average in the past on long-range forecasting of a somewhat more conservative nature, says prospects of his present venture hitting it on the nose for specific cities are about 60 per cent. His system, he says, is based on his discovery that there are harmonic cycles of precipitation and temperature variations at all the points studied. These harmonic periods, he says, are identical in length with cycles of variation in the radiation output of the sun.

Abbot's forecast did not cover New York City, but he predicts that Washington, in January, 1961, will have 1.6 per cent more rain than normal, presumably auguring unpleasant news for outdoor presidential inauguration exercises, but it will be much wetter in Washington in 1965, when the succeeding inauguration takes place. We shall wait and see, but most of our group will probably not worry. If interested, the full report may be purchased from the Smithsonian at \$1.25 a copy. The secretary, having known and admired the author for nearly 70 years, is pleased to make this announcement. Of course we all know that Charlie is the top scientist in our class, with membership in many foreign astronomical societies, the award of the Draper and the Rumford medals, and a handful of honorary degrees, but he keeps all this in the background at class reunions.

A letter from C. G. Abbot dated April 16, states: "The Institution is sending out several thousand copies of my 1950-1967 forecast of precipitation for 32 cities. Already over 2000 orders at \$1.25 each have come in. About 100 come in every day, so the Institution is ordering 3000 more copies printed. People are joking me about my 'best seller.' I work six to ten hours a day computing, besides my ordinary occupations and a world-wide correspondence. Last week I was waiting at the golf course for my two playmates, two Baptist deacons who retired two years ago at the age of 70. At length they toiled up the ramp and a loafer in the office said to me, 'Here comes your father now!' I made 47 on nine holes that day. Not in President Eisenhower's class." What a man! He will be 88 ere this meets your eye.

Your humble secretary is about to flit to Miami for a three-day meeting of the Refrigeration Research Foundation, where he hopes to gain his retirement from the chairmanship of the Board of Governors which he has held for 16 years. It has been a most enjoyable position and association with a fine group of men in a useful organization, but the time has

come when the defects of heart, eyes and ears make it imperative that he give place to a younger and abler man. In May he expects to go to the 20th annual meeting of the Institute of Food Technologists at San Francisco where a very significant (to him) duty is assigned to him — the presentation of a memorial plaque to the widow of the late Professor Proctor, the secretary's successor in the Department of Food Technology at M.I.T., and a former President of the Institute of Food Technologists. Between the two of us there had been a virtual father-son relationship for 20 years. While in that city he also hopes to visit Jack Nowell once more, as it was his privilege to do last October. Jack is the only '94 man left in that area, so it will be a happy occasion, as we have been warm friends since Freshman days. The secretary hopes that other of our survivors will send him news of their doings and their memories, for future notes. — SAMUEL C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge, Mass.

'95

Early replies to our postal for our proposed annual meeting on June 13 next and luncheon with the M.I.T. Alumni Association came from our most distant classmates: Robert D. Farquhar, Berkeley 5, Calif.: "Very much regret not able to be with you," and Dorville Libby, Jr., Richmond, Calif.: "No reservations, best wishes in absentia. About 88 years and 3000 miles insurmountable barriers."

We are indebted to Mrs. Matthes for her kindness in sending to us a 30-page booklet entitled "Memorial to Gerard Hendrik Matthes, A Reclaimer of Rivers (1874-1959)," by David E. Donley, and published by Mrs. Gerard H. Matthes, March, 1960. The limited space for these notes does not permit an adequate account of the value of this booklet. It not only is a pleasure to read but also will inspire those seeking a place at M.I.T.: "On March 16, 1874, in Amsterdam, Holland, Gerard and his twin brother Francois Emile were born to Willem Ernest and Johanna Suzanna Matthes at their stately mansion on the Heeren Gracht. Their father was a partner in a chemical firm producing dyes, acids, etc. Their mother formerly was Johanna Suzanna van Does de Biji, a beautiful and refined woman, with a keen mind and a flair for history. Brought up in the old university town of Leiden, she mingled with the court circles at The Hague. Both were descendants of old and distinguished families, and were patrons of the arts and collected many fine paintings and other art objects.

"Their father was also a lieutenant colonel in the National Guard (militia) and commanded the artillery unit assigned to Amsterdam. General L. J. du Cellié Muller, Chief Engineer of the Department of Waterways and Dikes for the Province of North Holland, uncle of the twins, discussed with them his work and problems relating to Holland's many waterways. He bequeathed many of his drawings to Gerard. It stimulated Gerard's imagination, and influenced him to study civil en-

gineering and to become internationally famous as a hydraulic engineer."

The above is from half of the first page of the booklet and is followed by an account of the life of the twins who left Holland on August 26, 1891, for the United States to enter M.I.T. with the Class of '95. — LUTHER K. YODER, *Secretary*; A. D. FULLER, *Assistant Secretary*.

'96

Ralph Henry writes that he has received the 1960 annual ballot and voted for the '96 candidate for the Alumni Council as printed — there is no room for a write-in. He hopes to see a good delegation of the class at Alumni Day on June 13. Our class, he says, leads in this series of ones and sixes. . . . Maybe someone in the class can meet the challenge of Senator Saltonstall, who wore 45-year-old boots when he skated in "Ice Chips" with Carroll Heis and Barbara Roles to greet four of the U.S. hockey team Olympic winners last week in Boston. Anyone have boots older than those? Last summer an older pair was given to a clothing drive.

The Alumni Register has sent a notice of the death of John A. McIlvaine of 855 Lakeshore Drive, Ashville, N.C., on last February 13. He received his B.A. from Gallaudet College in 1893. . . . There is a letter from Mrs. Edward Bragg in which she expresses her appreciation of the note of sympathy from the class. She says her husband was a Christian gentleman at all times, and that he continued his professional work and research for several years after his retirement. For the past two or three years he had been in and out of the hospital. — JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline, Mass.; HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline, Mass.

'97

We have had word from Howard (Pete) Noble, our First Marshall at graduation. As he is nearly blind, his housekeeper transcribed his note. He gets around his home very well. Recently he enjoyed a card received from one of the '97 boys and I am sure he would appreciate hearing from other classmates.

We have no definite plans for a meeting of the class this year, but we hope many will be on hand Alumni Day so we can have an informal gathering. — AUGUSTUS C. LAMB, *Secretary*, 61 Hillcrest Place, Amherst, Mass.

'99

A column-long obituary of Bassett Jones appeared in the *New York Times* on January 25, 1960. He had died 10 days earlier in St. Luke's Hospital in New York City, following an operation. He was a member of the firm of Meyer, Strong and Jones, consulting engineers of New York City. I have occasionally commented in these columns on his exceptional engi-

neering career, but I find I have only lightly touched on his brilliant accomplishments. The *Times* says of him: "He was known as an economic theorist, horticulturist, and inventor of one of the earliest processes to freeze seafood."

"Mr. Jones studied at the Stevens Institute of Technology and the Massachusetts Institute of Technology, where he received a degree in 1899. After serving five years as a workman on various engineering projects, he was sent to Panama by the federal government to make studies of metallic corrosion and rust prevention for the Panama Canal. In 1903 he became a supervising engineer with the predecessor of the real estate firm of Brown, Wheelock, Harris and Stevens. Four years later he joined the Henry C. Meyer electrical engineering organization."

"In directing the development of the elevator system in the Empire State Building, Mr. Jones, as chairman of research committees for the Merchants' Association here and the American Standards Association in Washington, succeeded in having New York City revise its building code to allow elevators to go faster than 700 feet a minute. The elevators at the Empire State Building move at 1200 feet a minute."

"Early in his career, Mr. Jones supervised stage lighting for the late Maude Adams and for the Washington Square Players. He was consultant for the illumination for Miss Adams' production of 'Peter Pan.' His firm later did the street illumination for Syracuse, N.Y., and the lighting systems for the United States Military Academy, the Riverside Church here and the Freer Museum and Corcoran Gallery in Washington."

"Until about 10 years ago, Mr. Jones spent his summers at Nantucket, Mass. His family had established a residence on the island in 1883. On Nantucket he conducted experiments in breeding shellfish and also succeeded in the development of a strain of black Japanese pine that was resistant to wind and salt air. He sold these hardy pines for planting at Jones Beach, L.I., and along the Montauk Highway. A former president of the Nantucket Fishermen's association, he understood the problems of the island's commercial fishermen. To assist them he developed a quick-freezing process for fish, which led to his association in 1921 with Clarence Birdseye. Together they formed the General Seafood Corporation in 1923, with Mr. Jones as president. Three years later the organization, which had expanded its deep-freezing process to other foods, became a subsidiary of the General Foods Company. The Postum Company bought the entire organization in 1928."

"Mr. Jones, in his work for the 1939 World's Fair, was responsible for making the fair grounds at Flushing Meadows, Queens, look like fairyland after dark. His idea was to make the buildings glow from within instead of having them spotlighted. As consultant on illumination and chairman of the Committee of Display, he also developed the Fountain Lake display at the Lagoon of Nations, which combined colored lights, water and fireworks in a nightly spectacular."

"Mr. Jones was the author of 'Debt and Production, the Operating Characteristics of Our National Economy,' published in 1933, and 'Horses and Apples' (1934), in which he spoofed theories of contemporary economists and the price indexes they reached by various mathematical means. He had been a fellow of the American Institute of Electrical Engineers and a member of the Architectural League. He leaves his wife, the former Emily Warren; two daughters by a former marriage, Miss Gwenyth Starr and Mrs. William Hoiness, and two grandchildren."

The following is taken from an article which appeared in the Sunday Hartford *Courant*: "Richard T. Gifford, 83, of 1021 Farmington Avenue, West Hartford, died Saturday (February 13) in a private convalescent hospital. He was born in Providence, R.I., and lived in West Hartford for the past 30 years. He attended the Fitchburg, Mass., and the Newark, N.J., public high schools. He also attended M.I.T. He was employed for many years as a mechanical engineer for the old Pratt and Whitney Company of Hartford, for five years with the General Motors export division, and for 15 years with the United Aircraft Corporation of East Hartford until his retirement in 1945."

"Mr. Gifford was a member of the St. John's Lodge No. 4 A.F. and A.M. of Hartford. He leaves his wife, Edith M. Carr Gifford, and a sister, Miss Maud L. Gifford of Fitchburg, Mass." — BURT R. RICKARDS, *Secretary*, 349 West Emerson Street, Melrose 76, Mass.; PERCY W. WITHERELL, *Assistant Secretary*, 84 Prince Street, Jamaica Plain 30, Mass.

'00

We record with regret the death of Frederic I. Merrick on February 23, 1960. He entered M.I.T. with the Class of 1900 but took a five-year course graduating with the class of 1901 in architecture. He then studied for a year in Paris, after which he settled in Pittsburgh, Pa., where he remained the rest of his life. His home was in Morewood Heights. He was an architect with his office in Pittsburgh until his retirement. He was director and board chairman of the Standard Horse Nail Company, and a member of the Pittsburgh Golf Club, Rolling Rock Club and the Wianno (Mass.) Club. He also was a trustee of the Merrick Free Art Gallery. He is survived by his wife, Eleanor DuPuy Merrick; three daughters, Mrs. Frank Semple Bissell, Mrs. Philip Wick, Jr., and Mrs. Rosario D. Celentano; a son, Herbert DuPuy Merrick, and 13 grandchildren."

We have also received word of the death on March 20, 1960, of Charles T. Leeds of Los Angeles. Leeds also entered M.I.T. with our class and remained three years, taking the course in civil engineering. He left M.I.T. in his junior year and entered West Point, where he graduated in 1903. He then returned to M.I.T., obtaining his B.S. in civil engineering in 1906. We have little information about his military record. During World War I he was a captain and later major of Engineers. He was in charge of river and harbor work and later

professor of military science and tactics and in command of S.A.T.C., Throop College (California Institute) of Technology, Pasadena, Calif. He also reported interesting experiences among hostile Moros in Mindanao. He was placed on the retired list in 1912 for physical disability incurred in line of duty after which he practiced as a consulting civil engineer in Los Angeles. He was a member of the firm of Leeds, Hill and Jewett, and was consultant for many important projects in Southern California. He reported two years ago that he and his wife had four children and 14 grandchildren. — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton, 65, Mass.

'01

I regret to have to begin these notes with a report of the death of one of our prominent and loyal members, Roger Wight, XIII, at the Cape Cod hospital on March 16, 1960. He had lived in Harwich Port for 11 years and was a prominent operator in Cape Cod real estate. He was a native of Natick, Mass. He was agent for a number of insurance companies and was associated with the Travelers Insurance Company from 1925 to 1947, spending the later years as the firm's Maine manager. He moved to Cape Cod after his retirement in 1947. He was a member of the Masons and a number of Cape Cod associations and was treasurer of the First Church of Christ, Scientist, in Chatham. He leaves his wife, a daughter, and a sister. He did a great deal for the class, being secretary from 1936 to 1941. He had many friends in the class and will be sorely missed."

Bill Farnham, VI, from East Orange, N.J.: "Nothing of note to report. Present plans are to attend the 60th reunion next year. Am happy to say my health is good and I find enough to do to keep busy." . . . A. L. Galusha, II, Verona, N.J.: "Retired from business in 1959 when 82 years old. Forty-nine patents have been granted to me. My patented gas producers have been put into successful operation on every continent in the world using local solid fuels and making gas out of them for heating, mostly in local manufacturing plants." . . . Perkins Boynton, XI, Clarksburg, W.Va.: "I think I am and have been the only M.I.T. graduate here. I have lived here for over 35 years. For 30 years I was chemist for the Clarksburg Water Board. I have been retired since 1954. I am nearer 81 than 80." . . . Will G. Kelley, VI, Santa Barbara, Calif.: "I have now completely retired and enjoyed the winter in California." . . . Charlie Tufts, X, New York (written in February): "I expect to head west as usual in a few days. What comes next is uncertain."

W. W. DeBerard, XI, writes from Chicago: "I am still in charge of the water works of Chicago as I have been for the last 20 years after having been retired by *Engineering News Record* as western editor for 31 years. That makes me older than I like to admit. The steel strike slowed up our \$100 million central district filter plant which is scheduled to furnish one billion gallons of water for the north

and central portions of the city. The plant is enormous and now something over half completed. Staffing the plant has already given us reason to look longingly at M.I.T. graduates a couple of years hence." — THEODORE H. TAFT, *Secretary*, Box 124, Jaffrey, N. H.

'02

The house organ of the Engineers Society of Pennsylvania, *The Pennsylvania Engineer*, in the issue of March 22, lists the society's honorary members with a short sketch of each. Two from our class appear on the list. To quote from the first sketch: "Mr. Farley Gannett — a devoted friend of our society during his active business life. As president of the engineering firm of Gannett, Fleming, Corddry and Carpenter, Inc., he never failed to interest his engineering personnel in the objectives of our society. As a result of his devoted principles and efforts, the firm which he headed presently has the largest single group (54) members in E.S.P., a tribute to his loyalty and memory. In 1958 he was awarded a posthumous honorary membership in the society, which was presented to his beloved wife with appropriate ceremony."

The second sketch is as follows: "Honorable Frank A. Robbins, Jr. — former general manager of the Steelton Plant, Bethlehem Steel Company. A distinguished leader in the steel industry he contributed much toward the industrial development of our nation. He served from 1947 to 1951 as State Secretary of Public Assistance of Pennsylvania. He continues his daily interest in the welfare of our less fortunate citizens, and his leadership in the expansion of hospital facilities in Harrisburg has earned him an honored position in the community. In recognition of his unselfish service, the society awarded him an honorary membership in 1958."

The Phelps Dodge Corporation in its recent report to its stockholders pays the following tribute to Cates: "Louis Shattuck Cates, President of the company from 1930 to 1947 and Chairman of its Board of Directors until his death on October 29, 1959, was one of the great industrial leaders of his generation. His career in copper spanned 56 years, during which his many talents enabled him to fulfill his responsibilities with a degree of success achieved by few men. Mr. Cates came to Phelps Dodge Corporation with an outstanding record as a mining engineer and administrator of unusual vigor, imagination and resourcefulness. As chief executive officer from 1930 to 1954, he directed the company's expansion into one of the world's great copper mining, refining and fabricating enterprises. He was a leader whose abilities and accomplishments attracted and held the respect, loyalty and admiration of his associates, and won him the most distinguished honors and offices of this country's professional engineering and metallurgical societies. His death is a great loss to the company."

Please send in any news which you may have about your own activities or those

of others. The items do not need to be of world shaking importance to be of interest. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

'03

We regret to announce the death of Mrs. Wilfred A. Paine, nee Jesse G. Gibson, on January 7, 1959. She was born in Indianapolis, Ind., on March 22, 1882. Her elementary and secondary education included some private tutoring, a year in Europe at the age of 10, and some years in the Indianapolis public schools. Shortly after her graduation from M.I.T. in Course IV, she married Wilfred A. Paine, who also studied architecture at M.I.T. They moved to Columbus, Ohio, where she lived until the time of her death. She had two children, one of whom died at the age of 15, and four grandchildren.

During the course of her long and busy life, she was active in various educational, cultural, social service and church groups. She established and operated a small private kindergarten for a short time, taught for about 10 years in a private girls' school, did volunteer social service work, and organized and headed various W.P.A. and similar government sponsored women's work projects during the depression. Previous to her sudden death, she had been serving for a number of years as assistant to the minister and later as parish visitor in the First Congregational Church in Columbus, Ohio. Our thanks are due her daughter, Mrs. Clyde O. Davis, for this information.

Ike and Mrs. Atwood report having had a wonderful trip recently to Portugal, Spain and Tangiers. Your secretary was pleased to receive a billfold made of goat-skin from Spain as a souvenir of the trip. — LEROY B. GOULD, *Secretary*, 36 Oxford Road, Newton Center 59, Mass.; AUGUSTUS H. EUSTIS, *Treasurer*, Box 1422, Boston 4, Mass.

'04

As these notes are being written (April 11) the ice cakes have departed from the Charles River and their places have been taken over by various kinds of boats. The pairs of ducks are becoming more frequent and will soon be accompanied by numerous offspring. Loving couples of humans stroll along the embankment and doubtless watch these signs of spring with approval. (Note: If you old has-beens don't like this kind of an introduction send in something which is more interesting.)

The only items of news are two notices from the Alumni Office announcing the passing of two classmates — F. W. Crocker, I, at Arlington, Mass., January 29, 1960, and Samuel E. Armstrong, I, Cape Porpoise, Maine, January 19, 1959. No details are at hand.

Since nothing else of importance is on the desk, your secretary is going to cast modesty to the winds and report that the Quincy (Mass.) Y.M.C.A. has announced the prospective opening this season of

"Camp Hayward for Girls" on the shores of Spectacle Pond at Sandwich, Cape Cod. The construction of this camp was authorized two years ago and was briefly mentioned in these notes. During the 30 years your secretary was president of the Quincy Y, the association bought nearly 450 acres of land in Sandwich for camp purposes with frontage on three ponds. A flourishing, well managed camp for boys named Camp Burgess has been in operation for many years. Four years ago the association erected a new building in Quincy designed to serve both sexes and this dual arrangement has had very successful operation. The plan makes possible family membership at special rates which have proved attractive. It was not long before the girls petitioned for a camp and a site was selected on the Sandwich property across the pond from Camp Burgess. The Board of Directors voted to call it Camp Hayward. The opening date, July 2, is being awaited with great interest by prospective campers.

In the construction of this camp, on land completely covered by trees and bushes, a unit of Seabees (U.S. Marine Corps Reserves), with mechanical equipment including trucks and bulldozers, spent many weekends in clearing the land and erecting the main building. This is a service authorized by the government for certain non-profit enterprises at no cost for labor or equipment, so you taxpayers have made a contribution to Camp Hayward. Thank you. — CARLE R. HAYWARD, *Secretary*, Room 35-304, M.I.T., Cambridge, Mass.; EUGENE H. RUSSELL, JR., *Treasurer*, 82 Devonshire Street, Boston, Mass.

'05

It is not too late to register, if you have not already done so, for our 55th reunion. Official notice was mailed to all regular members of the class the early part of April. The place is Wequasset Inn, East Harwich, Mass., and the dates, June 10-11-12, 1960. The brochure you have received places the inn "on Route 28, between Chatham and Orleans, on beautiful Pleasant Bay." If you have any question as to the routing, write to William G. Ball, Box 285, Cotuit, Mass. Bill is chairman of the reunion committee. Write to him about any question of accommodations, and so forth. As usual we plan to arrive at the inn on Friday P.M. According to reservations most will leave Sunday after dinner. A program to accommodate all tastes is being arranged. A clambake right on the grounds is promised. East Harwich is situated "on the horn of the Cape" and we will be much nearer to Provincetown and other scenic and historical spots than ever before. Percy Goodale suggests this slogan: "Come all '05's — 2-55th — 4-6T." See you soon.

Little news has reached me since last writing. I learn from Bill Ball that he has been active: "in town affairs, the proposed National Park, and on March 10 was elected Commander of the Cape Cod Power Squadron, a part of the U. S. Power Squadrons, with over 50,000 members in the United States and Canada. Sentiment

regarding the National Park in the towns of Chatham, Orleans, Eastham, Wellfleet, Truro and Provincetown is mixed, and its status can only be settled by a referendum of the whole county making up Cape Cod. The situation is very confusing and it may take a long time before the matter will be decided one way or the other." . . . We are going to miss Dan Harrington at the coming reunion as Mrs. Harrington writes that Dan has just had an operation and his convalescence will probably not have reached a sufficient point by mid-June.

Sid Caine writes: "At the present writing it does not seem probable or possible for me to get up for the reunion. Being retired has not relieved me of clerical duties. I am not in charge of any work, it is true, but help regularly with the services on Sunday. There are five services at St. John's in Norristown and three on weekdays, besides confessions on Saturday, sick calls, and the hospital. This summer, the rector is taking a month off for a trip to Europe so I'll be filling in. The other members of the staff have their vacations staggered from June through September. It has meant in the past few years that I have had no time off."

It is with the feeling of real personal loss that I announce the death of Ralph E. Hadley, I, who passed away on March 24, 1960, after a long illness. Ralph and Grace had been regular attendants of our reunions and they were loved by all. Henry and Mildred Stevenson and Ruth and I attended his funeral on Sunday, March 27. Ralph was so well known that it seems superfluous to give a detailed obituary, but for the benefit of those who have not seen him regularly at reunions, and those who do not get *The Review* regularly, I quote from a clipping from the Lawrence, Mass., *Tribune*: "Ralph E. Hadley, 30 Wolcott Avenue, Andover, died Thursday morning at the Shady Knoll nursing home, North Andover. He was 77 years old. Born in Lawrence he was a resident of Andover for 40 years. He was graduated from Lawrence High School in 1901 and from Massachusetts Institute of Technology in 1905. He is the retired treasurer of the former George Hadley wholesale grocery firm of Lawrence. A member of South Church, Andover, he was a 32nd degree Mason and a member of St. Matthew's Lodge, A.F. and A.M.; a member of the Yorkrite Bodies of Lawrence and Aleppo Temple of Boston.

"He is survived by his wife, Grace F. (Bradbury) Hadley of Andover; a daughter, Mrs. Richard MacMillan of Wantagh, N.Y.; a son, G. Edwin Hadley of Chatham, N.J.; a brother, Walter H. Hadley of Lawrence, and a sister, Dorothy, wife of Joseph Fost of Newbury; also 10 grandchildren." Hub Kenway reminds me that Ralph, right up through the 50th reunion, maintained his class tennis championship. Hub says: "In spite of my repeated attempts to take it from him, I beat him just once and that was at the Marion Reunion about 1919, but at every reunion since then, including 1955, Ralph was too much for me." —FRED W. GOLDTHWAIT, *Secretary and Treasurer*, Box 32, Center Sandwich, N.H.; GILBERT S. TOWER, *Assistant Secretary and Treasurer*, 35 North Main Street, Cohasset, Mass.

'06

Guy Ruggles, III, left Phoenix on April 9 for Miami but he traveled only 90 miles or so. It was to Miami, Ariz., and the occasion was a meeting of the ore dressing division of the Arizona section of the American Institute of Mining, Metallurgical and Petroleum Engineers, the Inspiration Consolidated Copper Company being their host. Guy expected to see a lot of friends there "but they will be my young friends." Most of Guy's long letter however was about Clarence Carter, I, who died in Reading, Mass., on March 26. Having been away that weekend I had missed the death notices so was not aware of his passing, and am very grateful to Guy for giving me such prompt notice. Guy and Clarence were both Reading natives and after 1896 had lived side by side on Grand Street. They entered Tech together as Clarence, a couple of years older, had worked for two years after graduating from Reading High. Guy says they both commuted, taking the same train in and out practically every day, and he recalls that they used a pocket chessboard to while away the 45 minutes on those trips on the "good old Boston and Maine."

Clarence Elmore Carter was born in Reading, February 3, 1883, was a member of the Civil Engineering Society and his thesis was entitled "A Study of the Duluth Aerial Ferry Bridge." He was one of four outstanding members of the class, being one of the quartet with a mustache that were so mature looking in the Portfolio. The others were Frank Ingalsbe, III, and R. B. Sarrete, III, from Valparaiso, Chile, and Fred Lutz, IV. Clarence went west soon after graduating as assistant engineer with the Nevada and California Railroad but he and Guy were soon together again in Salt Lake City when Guy was at the Garfield concentrator of the Boston Consolidated, and Clarence was in charge of irrigation work for the Oregon Short Line Railroad and the Twin Falls North Side Land and Water Company. However, by 1913 Clarence was back in Reading where he maintained an office as consulting engineer until 1918, then for two years was with the Boston firm of sanitary engineers, Weston and Sampson, on design and construction of housing developments during the war, and later in water filtration plants.

Since 1920 he had been assistant civil engineer with Metcalf and Eddy on water supply, valuations, sewers, and sewage treatment plants, retiring around 1956. Sherm Chase tells me that he was resident engineer on many Metcalf and Eddy jobs, and in concluding the data Clarence sent Jim for "Thirty Years After," he said: "The majority of the time from 1918 has been spent on construction work, and in the field most of the time." Like many others of the class, he was akin to the "shoemaker who stuck to his last," having a long, constructive and productive professional career.

In 1907 he married Alice S. Kidder of Reading and I have just had a long phone conversation with her to express for the class our very deep and sincere sympathy.

Clarence had suffered severely for several years from an affliction (tic doloreux) which affects the facial nerves, I believe, and for which little if any relief seemed to be available. He had entered Baker Memorial Hospital where complications developed. He was a member of the American Society of Civil Engineers, New England Waterworks Association, the Reading Antiquarian Society, First Congregational Church, Good Samaritan Lodge AF & AM, and Security Lodge IOOF.

In May notes the death of my course-mate Jim Banash was reported and since then, replying to my note of sympathy, Mrs. Banash has sent me more accurate details of his career and copies of a few of the notices which appeared in numerous publications. She said she received close to a thousand messages from all over the U.S., Canada, and other countries. Excerpts from the International Acetylene Association news bulletin for January indicate the high degree of professional competence Jim had attained: "In Memoriam. James I. Banash, I.A.A.'s consulting engineer and 1949 Morehead Medalist, died on January 10. . . Mr. Banash's interest and activity in safety and fire prevention — particularly with reference to compressed gases — were widely known and highly recognized. He was a past president, honorary life member and director of the National Safety Council; past chairman of the committee on gases of the National Fire Protection Association; past general chairman of the American Society of Safety Engineers; a fellow of the American Society of Mechanical Engineers; a founder of the American Welding Society; and he had served as I.A.A. Consulting Engineer since 1922. . . In the late 1920's the medical profession began to show an interest in the use of oxygen, but no one in the profession had much idea of the problems of handling high pressure gases. Mr. Banash applied his talents as an engineer, developing the mechanical aspects of the medical use of oxygen."

From *Traffic Safety* for March: "James I. Banash, internationally known authority on compressed gases and president of the National Safety Council, 1932-1933, died January 10 in Los Angeles, where he had lived since his retirement in 1951. A graduate of M.I.T. with a degree in electrochemistry, Mr. Banash served as instructor at the Institute for a year. For 12 years he was with Underwriters' Laboratories in Chicago and became head of the casualty department. As consultant to Union Carbide Corporation and the I.A.A., he made important contributions to safety in the use of compressed gases." A press release for January 13 from the public relations department of Union Carbide stated that he had been a consultant to the Atomic Energy Commission. Jim married in 1924 in Chicago — his wife's name is lacking but I seem to recall that he had told me her maiden name was Rowe. She died in 1942; and a year later he married Cecelia Murphy who survives him, also an older brother, an attorney in Boston, whom I have tried to contact without success as he is in poor health.

Among the death notices in the *Herald* of March 25 was one of interest: "Major Charles T. Leeds (U.S.A. ret.) passed away March 20, 1960, in Pasadena, Calif. A

native of Newton, he was a graduate of West Point in 1903 and of M.I.T. in 1906 . . . Charles Tileston Leeds, I, was born May 14, 1879; was a graduate student with us in our senior year, and his thesis was "Design for Reinforced Dam and Lock at Modoc, Savannah River." Except for a short spell at Fort Bayard, N.M., he lived in southern California both before and after retiring. As Captain in the U.S. Corps of Engineers he had charge of all river and harbor improvement work in that area, fortification work at San Diego and construction of the San Pedro breakwater. During World War I he recruited troops and was professor of military science and tactics and in command of S.A.T.C. at Throop College (California Institute) of Technology in Pasadena. He was also a member of the Board of Engineers, of flood control, Los Angeles County, and was on the Orange County Harbor Commission. Except when recalled for army duty, he was a partner for 40 years or more in a firm of consulting engineers in Los Angeles. He is survived by his wife Amy L. (Shapleigh), whom he married in 1905, a son, three married daughters, and 14 grandchildren. His career is here recorded although in 1939 he requested and was granted, by the executive committee, a change of class affiliation from 1906 to 1900.

On March 11, shortly before they left for Florida, Sherm Chase was honored at a dinner in Boston, attended by over 100 Metcalf and Eddy men, women and wives, by the presentation of a citation in recognition of his long service, for many years as senior partner. Then came the surprise, when it was announced that several hundred dollars had been contributed to establish an E. Sherman Chase Award by the New England section of the Sewage and Industrial Wastes Association. After their vacation and business trip to Florida, the Chases returned early in April, as did most of the other sojourners, I suppose. Last call for June 13 on campus. — EDWARD B. ROWE, *Secretary-Treasurer*, 11 Cushing Road, Wellesley Hills 81, Mass.

'07

There will be no '07 reunion, as was stated in the April issue, at Oyster Harbors. We received notice from The Technology Review that this statement was being corrected in the May issue. John Frank wrote to me for news of the scheduled (?) 1960 reunion. As a result, I sent a hurried S.O.S. to most of the class members, and at the same time asked for information to publish in these notes. Several of the men wrote to me, and I quote from these replies.

Newark College of Engineering, a state college, this year observes the 75th anniversary of its "birth." From a small handful of students in 1885, this school has grown to a full-fledged engineering college, ranking with the top-rated technical institutions in the land. Our classmate, Dr. Allan R. Cullimore, was president from 1920 to 1949. . . . The February issue of the *New England Architect and Builder* contained Part II of "Decorative Tiles"

by our classmate, E. Stanley Wires. It is a most informative article, profusely illustrated and well worth reading.

Milton MacGregor has retired, after completing 25 consecutive years as clerk in the Brewster Baptist Church and in the Needham Baptist Church to which he formerly belonged. He is now a deacon and a Sunday School teacher at the Brewster Church. He has been elected secretary of the six leagues in the Orleans bowling center and is captain of a team which is in first place in its league. Being secretary involves keeping the standings of the teams in each league and the averages of about 350 bowlers.

Leon L. Allen passed away February 4, 1960. This information was received from the family in answer to my circular class letter. He was a Course I student and has been a non-associate member since 1907.

Bill Coffin writes that he has practically retired from active work and says that, at the age of 82, he probably is the oldest '07 man. His wife is gradually recovering from a fractured ankle and other injuries as the result of an accident last January. . . . Wheaton Griffin has not been very well, as the result of three major operations in the last three years; but he still keeps going and serves on various business and charity boards. . . . Earl Reed is still active as an architect in Chicago. . . . Bill Otis is not too well at present. . . . Fred Dempwolf wrote that his eye condition is very much improved, but he is generally retiring from his work as an architect.

John C. Bradley wrote that his hobby is collecting shells. He has been to Jamaica, Canal Zone, Virgin Islands, Mexico, California, and Florida, and found that being an amateur conchologist has added a lot to his trips. He has learned to use the word "ecological," as the shell collectors he has met have to know just where and when the shells were found. . . . Phelps Swett had no special news but hopes that any '07 fellow who goes to his beautiful Green Mountain State will not pass him by. At the time of writing, he planned to go to Virginia for a week or so. The end of June he expects to go to Boothbay Harbor for a week. Boothbay Harbor is Tom Gould's stamping ground.

Charles Bragdon mentioned the possibility of his granddaughter's attending Middlebury College. Mr. Bragdon and his wife celebrated their 50th wedding anniversary last June 16. They intended to celebrate very quietly, but their three daughters had other ideas and they were inundated with letters, telegrams, telephone calls, gifts, etc., not to mention a surprise tea-party brought in by a few local friends. All this called for a second honeymoon — a leisurely trip to Europe, visiting many places of interest, plus a 10-day cruise from Bergen, Norway, around North Cape to the Russian border and back. They had exceptional weather and he recommends cargo ships for luxurious ocean crossings. The slow pace gave him time to do quite a bit of writing on a book project. While in Freiburg, Germany, they met a woman with whom his daughter had corresponded since 1946. She had lost everything in a bombardment and had received a "Care" package from Mr. Bragdon's daughter. She now

works in a bank and is near retirement age. She took a two-day holiday to show them around the city.

W. Henry Bradshaw is building a summer home on Block Island and spends about half of each year there. . . . Lester W. Brock writes that, besides having eight grandchildren, he has never been so busy. Through his daughter, who is the head librarian in the General Tire research department, he has become very busy with the publication of the "Bibliography of Rubber Literature," which is published periodically by the American Chemical Society division of rubber chemistry. Both he and his daughter are attending the TV course in modern chemistry put on by the American Chemical Society at 6:30 A.M., Monday through Friday. They find it a most helpful experience.

Lev Cutten wrote me a very interesting letter, describing in detail how he makes his "drypoint" Christmas cards. No one but a true artist could spend as much time and effort on his work as Lev does. Whether it be a Christmas card, a piece of hand-wrought silver, a mace, a collar, or an arrow — each is as nearly perfect as it is humanly possible to get it. He is, at present, working on the collar to go with the mace we presented to the college in 1957.

I wish to thank Tom Gould for getting out the notes for last month. — PHIL WALKER, *Secretary and Treasurer*, 18 Summit Street, Whitinsville, Mass.; GARDNER S. GOULD, *Assistant Secretary*, 409 Highland Street, Newtonville 60, Mass.

'08

June is nice on the Cape. How about a weekend there at our 52nd reunion? We will be at the Melrose Inn, Harwichport, Mass., on Friday June 10, Saturday June 11 and Sunday June 12. Ladies are invited. So why not join the gang, to see old friends and have a good time? We expect a good turnout, but there is always room for more. So come along, the unexpected guests are more than welcome. Monday, June 13, is Alumni Day at M.I.T., Cambridge, Mass. There will be lots to see and hear and plenty to do, a fitting climax for '08's 52nd. Don't miss it.

Last call for subscriptions to the 1960 Alumni Fund, which ends June 30. It would be appreciated if you will get your gift in before Alumni Day June 13.

Henry and May Sewell visited their daughter at Dallas, Texas, during March. Henry was anxious to see what Dallas had done since he was there 50 years ago. . . . Joe and Eudora Wattles have bought a house on Casey Key off Venice, Fla., so they will not be dependent on hotels for their future winter vacations. . . . Leslie and Helen Ellis were again at Clearwater Beach, Fla., during March. . . . Myron and Gladys Davis, who were in Mexico during March, had hoped to take in the M.I.T. Fiesta at Mexico City as they had several years ago. Unfortunately, the high altitude of Mexico City got Myron, so they had to move on to a lower altitude and missed the Fiesta.

We are sorry to report the deaths of several classmates. John Mullen of Chicago, Ill., tells us of the death of Richard Wilson on August 26, 1959, at his home in Vancouver, B.C. . . . Ernest J. H. Waters died on February 3, 1960, at his home in Walsall, England. . . . Joseph W. L. Hale died on March 29, 1960, at his home in Newburyport, Mass.

Hope to see many of you at Harwichport, Mass., for our 52nd, and at Cambridge, Mass., for Alumni Day June 13. — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass.; LESLIE B. ELLIS, *Treasurer and Assistant Secretary*, 230 Melrose Street, Melrose 76, Mass.

'09

We regret that in the past two numbers of *The Review* there have been no 1909 notes. We had not received any news and were unsuccessful in soliciting any. Undoubtedly, after hearing so much from one another at the anniversary and then receiving the many newsy letters which have appeared in the numbers of *The Review* which followed, we have used up temporarily, we hope, all current available material. However, we trust that members of the class will now make extra efforts to send news of classmates and their activities.

We received a clipping from the Newark, N.J., *Evening News* stating that the trustees of the United Hospitals of Newark had concentrated their attention on the "development of the new building program while welding together the four units into one operating organization." Among the accomplishments was the creation of the position of chairman of the board and the election of Arthur W. Lunn, VI, first president of the institution, as chairman of the board. This is the first news concerning Arthur that has appeared, we believe, since we have been secretary, and for many years he must have been president of the hospital without our being aware of it.

We have learned that Tom Desmond, I, is the author of an article entitled "The Voiceless Speak Again" in the February 1960 issue of *Today's Health*, the magazine of the American Medical Association. Although retired as Senator, Tom still keeps active in his contributions to the public welfare.

Molly, XI, sent us a clipping from the *New York Times* of March 30 telling of the death of George Gadsby, V, chairman of the Utah Power and Light Company, which occurred on March 29 due to a heart attack at the age of 76. He was born in Collingwood, Ohio, and graduated from Marietta College from which he received a bachelor's degree in 1906 and a master's degree a year later before coming to the Institute. Marietta bestowed the honorary degree of Doctor of Laws upon him in 1941. He was also the recipient of honorary degrees from the Universities of Pittsburgh and Utah. He joined the West Penn Power Company in 1918, becoming its president nine years later. In 1929 he joined the Electric Bond and Share Company as head of its Salt Lake affiliate, Utah Power and Light. He

retired from the post in 1954, remaining board chairman. For a long time he was a spokesman for private utilities in the West and a staunch opponent of public power. He was president of the Edison Electric Institute in 1951-1952 and has been a director since then. At the Institute he was a member of the Chemical Society and was in the Tech Show chorus and the Glee Club for three years each. He leaves his wife, Evelyn; a son, Charles C., and six grandchildren. We have written to Mrs. Gadsby extending the sympathy of the class as well as our own. — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass.; GEORGE E. WALLIS, *Assistant Secretary*, Wenham, Mass.

'11

The March issue of *Science* carried a long and wonderful story of the life of Edward Tolman, whose death on November 19, 1959, was reported in the February *Review*. The following are quotations from that story, which was signed by three of his colleagues in the department of psychology at the University of California:

"Edward Tolman was born in Newton, Mass., in 1886. He graduated from M.I.T. in 1911 with a B.S. in electrochemistry. Pursuing his combined interests in science and the philosophy of human conduct, he entered into graduate study in the joint department of philosophy and psychology at Harvard. After receiving his Ph.D. in 1915 and after a brief period of teaching at Northwestern University, Tolman came in 1918 to the University of California, where he remained for the rest of his career. It was here that he began the experimental and theoretical work that was to continue for four decades. The stimulating conceptions of his system, ceaselessly changing and growing over the years, have had a profound influence upon the science of psychology and upon the generations of psychologists who studied with him. The extraordinary professional esteem in which Tolman was held is shown by an unending flow of scientific honors bestowed on him. But these honors cannot convey a proper sense of the affectionate place Tolman occupied in the minds and hearts of his students and colleagues and of psychologists everywhere."

In the April *Science News Letter* Admiral Luis deFlorez was quoted as saying that he thinks weather research is of greater immediate importance than landing a man on the moon, and that practically no effort is being made to determine whether storms can be diverted or dissipated, or whether the energy developed in such atmospheric disturbances can be used as a weapon for or against us. America's air defenses depend on the weather, he said.

A card from Don Stevens said that he and Cleon Johnson visited Royal and Jessie Barton March 16 at their home at Lake Intervale, Boonton, N.J., which Don said is beautiful. Don represented 1911 at the March 8 meeting of the M.I.T. Club of Northern New Jersey. . . . The

1960 Alumni Fund campaign is progressing and open for additional contributions. All contributions are gratefully received, and if you have not already done so please give all you can, now.

The following address changes have been received, all effective in March: Norman Duffett, X, back from Lake Worth, Florida to 909 James Avenue, Niagara Falls, N.Y.; Frank G. Smith, III, 5310 Manauwea Street, Honolulu 16, Hawaii; Nathan Levy, I, Hotel Ambassador, 1737 Cambridge Street, Cambridge 38, Mass.; and Edwin Pugsley, VI, Leets Island, R.F.D. 3, Guilford, Conn. — HENRY F. DOLLIVER, *Secretary*, 10 Bellevue Road, Belmont 78, Mass.; JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

'12

Our class secretary, Frederick Shepard, Jr., is off on a trip for several months, so he has asked me to pinch hit, as my name has appeared in the last two issues of *The Review* as your assistant secretary. We hope to receive some interesting news from Fritz on his travels.

In February I was in California for a few days and spent a pleasant evening with Marcus M. Cory in San Diego, and had lunch with William C. Lynch in Los Angeles. Cory and his wife spend six months each year on their yacht, cruising along the west coast of Mexico and the United States, and the balance of the year in sunny California, except for occasional foreign trips. Shortly after graduation, Cory was associated with Page Golsan and they had many adventures together in Canada and in different sections of the United States. Cory stated that the Golsans were now on a trip around the world. . . . Bill Lynch has retired from the Aluminum Company and spends a lot of time on the Los Angeles Golf Club golf course keeping his game under control. The Lynches are also travelers. Bill likes to motor through the eastern states, and during the past five years has made three extended European trips.

Word from William C. Bird from Northampton, Mass., indicates that Bill has moved up from President to Chairman of the Board of the Prophylactic Brush Company. He has unloaded most of the details, but is still a consultant and is also a member of the Board of Directors of the Lambert Pharmaceutical Corporation. . . . Ralph F. Symonds is still very active in his own business which he started 35 years ago. He is taking under advisement the possibility of "early" retirement at the age of 80! Ralph has mentioned the good time we all had at our 45th reunion, and he and his fine family are looking forward to our 50th. . . . Eugene T. Marceau has mastered the fine art of "slowing down." Gene had to retire in 1946 due to a heart condition. His 10 years in Florida have made him a regular chamber of commerce booster. He recommends Florida for any of our old gang whose bones really creak.

Lawrence B. Walker still lives in Bridgeport, Conn., where he was with the Borsich Company for many years. He

retired in 1956. His son is with General Electric in Pittsfield. The Walkers have two grandchildren. . . . A newsy little note from Willis R. Salisbury from Clearwater, Fla., reads in part as follows: "I semi-retired in 1958. We went to Europe for four months, buying a Renault in Paris and touring on our own. Through my stamp collecting hobby I had several friends in various countries whom we met for the first time. We enjoyed these contacts as well as the whole trip through Europe and England-Scotland. Last year I retired and we spent about five weeks in Hawaii after driving to the coast; then hopped the British liner *Himalaya* to Japan and Hong Kong. A wonderful experience. Made a nice contact in Japan in the person of the owner of the Fujiya Hotel, whose son came over last fall to enter Cornell, and stopped off for a week with us. We came down here a week ago to escape some cold weather in Minneapolis, but it tagged us. Ran into French Sergeant '10 who lives here." While the Salisburys were touring Europe in their Renault, Mrs. Noyes and I were touring the same countries in a Volkswagen for four months. Sorry we did not meet!

Harold H. Brackett reports that he and Dr. Robert J. Wiseman had the pleasure of attending a dinner in Newark, N.J., in December to honor Henry W. Coddington upon his retirement from the Public Service Electric and Gas Company. Harold states that it was a gala occasion with a very large attendance of Coddington's friends and associates. We understand that Bob Wiseman just retired from Okonite Company but is still retained as a consultant. . . . Another classmate just added to the retirement list is Bernard H. Morash, who was sales manager for the Dudley Lock Division of United-Carr Fastener Company of Canada. . . . Since graduating from M.I.T., Frederick H. Dierks has been with Dierks Forests, Inc., and their subsidiary companies, having been president for many years, and continuing to be very active. They operate four lumber mills, manufacturing southern pine lumber, millwork, and oak flooring. They also have a wood-treating plant for processing lumber, poles and posts. Some of their latest projects include a Kraft paper mill for making unbleached paper for bags and a sheathing board factory. Under Frederick's administration, they have practiced conservation and the reforestation of timberlands for over 35 years. Dierks is planning to see us all in June, 1962, at Snow Inn. (Dierks's son, Frederick M., was a 1942 M.I.T. classmate of my son, Jonathan H.)

J. H. Pratt has written an article on retirement at the request of the Army Ordnance. He is an authority! To prove this, read the following quotes from his recent letter to me: "I retired in June, 1957, and have really enjoyed life since then. . . . We are both fortunate to have good health. We spent three months in Europe in 1957 and enjoyed every minute of it. That trip covered England, Scotland, Holland, Germany, Austria, Switzerland, Italy, a rest at Majorca, then Spain and home. In 1958 we drove to Mexico for our 16th winter visit, and spent the rest of the year around home. Played a lot of golf and took care of the garden. In the

early fall drove to New England and spent a few delightful days in Maine with the Torreys. The year 1959 was busy, putting 25,000 miles on a Thunderbird: some 8,000 miles in January and February in Mexico; 6,500 miles in July doing the Rockies from Denver to Banff, Lake Louise and Jasper; and then in October another trip to New England for a family reunion. In between were several trips to St. Louis, where our son and his wife live with four wonderful grandchildren aged 6 to 18. He was M.I.T. '39 and is doing nicely for himself as a manufacturer's agent. This is the first winter since 1938 that I have stayed through here without a winter trip. Fortunately, it has been mild and I've enjoyed it. Have bowled some and done a lot of curling for exercise.

Priscilla has just come back from two weeks in Cuernavaca for a Girl Scout meeting. She is still very active in international scouting as Vice-Chairwoman of the Western Hemisphere Committee. Due to this activity of hers, we are planning another trip starting April 1. We fly to Rome, and then to Egypt, the Holy Land, Turkey, and then two weeks in Athens where the world scout meeting takes place. From there we go to Yugoslavia, northern Italy, Oberammergau, Switzerland, France, and England and home about July 1 — too long to be away, and I'm afraid it means no garden for us this year. Well, from the above, you can see that the Pratts are busy and very much enjoying retirement."

If all these reports on the 1912 class doings do not convince you that there is still a lot of "umph" in the old gang, and that we are a mobile group with many interests and activities, then read this fine letter just received from Charles A. Cary: "I retired from my official job as vice-president and executive committee member of Du Pont on May 1, 1955. I believe you knew that from our conversation at Snow Inn in 1957, but will repeat it for benefit of the record. I have retained my directorship in the Du Pont Company and also in the local utility, Delaware Power and Light Company. Before retiring, I began to cultivate a number of outside activities, and have kept up pretty much the same gait for the past five years, with an office here in the Nemours Building. As a Bowdoin College trustee, member of the international committee of the Y.M.C.A.'s of the U. S. and Canada, member of the boards of the United Community Fund and Councils of America, and the local Community Fund, Welfare Council, and Y.M.C.A., and with a variety of other intermittent undertakings thrown in, I have had plenty of committee jobs to keep me busy in the office when I haven't been on the hop from one meeting to the next. When I quit regular work, I figured it would be a good idea to keep going without breaking my stride, and that is what I have done for the major part of the year.

"Of course, retirement has given us the opportunity to introduce a few interludes into the routine. For most of the summer, we retreat to our Maine coast hideaway on Pond Island in Narragansett Bay below Milbridge, where we sail, eat lobsters, or just loaf, and lead a primitive life in grateful relief from the Wilmington

rat race. Incidentally, you went right by there last summer on your motor trip north; next time you must not pass us up now that you know where we are. Pond Island has no telephone or other bothersome modern devices, so we need advance notice of when to pick you up at Smith Cove, our mainland base, on the bay below Milbridge. Just 'Milbridge' is sufficient mail address. Keep a note of it, and come by whenever you go that way again so we can give you a glimpse of our remaining unspoiled part of the country.

"In the summer of 1955, we substituted a European trip to attend the Y.M.C.A. World Centenary at Paris. We crossed to Bergen on the *Oslofjord* of the Norwegian American Line, spent July on a wonderful vacation in the Norwegian fjords, motored through The Netherlands, Belgium, Luxembourg, and France to Paris and returned via England.

"In the winter of 1957 and 1958, we went further afield and spent three months on a tour through Africa and the eastern Mediterranean. We flew to Rome for Christmas Day, then directly south over the Mediterranean and the Sahara Desert to Accra, capital of Ghana. We spent two weeks in Ghana attending the International Missionary Council Assembly at the University College of Accra, where we had an interesting opportunity to meet some 200 participants from every part of the world. We also took several trips into the Ashanti country and Togoland where we talked with schoolteachers and village chiefs. The next two weeks we spent in Liberia where I was the U. S. delegate to a conference of the Y.M.C.A.'s of West Africa held at Monrovia. As in Ghana, we took trips to the back country; visited the rubber plantations and iron mines; met President Tubman and several members of his cabinet under both formal and informal circumstances; and saw several phases of the U. S. Technical Assistance operations. The rest of the trip was a more hurried circuit; we made stops of only a few days at Leopoldville in the Belgian Congo, Nairobi, Addis Ababa in Ethiopia, Cairo, Beirut, Athens, and Rome. Local contacts were available at all of these places and afforded us the opportunity for many unusual peeks behind the scenes. From Rome we went down to Naples and Sorrento for a few days and returned to New York from Naples on the *Excambion* of the American Export Lines, with stops at Leghorn, Genoa, Marseilles, and Barcelona. All in all, it was quite an adventure and we still enjoy reviewing it with the benefit of some 500 Kodachrome slides I took.

"We hope to extend our travel experiences to the Far East sometime soon, but this spring we are beguiled by a Caribbean cruise. We are leaving tomorrow for Antigua, B.W.I., where, with three other couples, we are starting a cruise to Grenada on a 110-foot schooner.

"Our families are growing up fast. Our three children are married and scattered between Virginia and Maine. We have 10 grandchildren, ranging in age from 4 to 18, and the oldest grandson is a freshman at Bowdoin this year. Both Frances and I are fortunate in enjoying excellent health and hope we can keep going long enough to see many more interesting places."

A short note from Mrs. Max Mason dated March 9 from Westwood reads as follows: "Mr. Mason's death occurred almost instantaneously on February 23. He had enjoyed solving the engineering problems in connection with remodeling a very old house and making it traditionally beautiful but wonderfully comfortable. He put so much of himself into it, that I shall always feel his presence here." The sympathy of the entire class is extended to Mrs. Mason and we know she will always enjoy Max's last handiwork.

I hope these varied class notes will start some kind of chain reaction and that I shall be swamped with mail here on the Texas prairies. . . . Albion Davis has everything under control for our get-together at Snow Inn in June, 1962. Will see you all then, but let's have a lot of biographies, histories, and news right now — today! — JONATHAN A. NOYES, *Assistant Secretary*, 3326 Shorecrest Drive, Dallas 35, Texas.

'14

Ever pushing onward, Dr. Ray P. Dinsmore (Dinny) added another plume to his many feathers. He has for some years been vice-president of research of the Goodyear Tire and Rubber Company. Now he has added member of the Board of Directors to his many titles. To the '14ers, none fits more appropriately than his title that he has attended almost every one of our five-year reunions, each with a supply of new stories.

How time passes on. It seems but only yesterday that our classmate was recording his advances in the company of Seymour Spitz. Today, Clarke Atwood calls to my attention that Spitz has already retired and that his son S. J. Spitz, Jr.'43, after moving through the several steps, has been made executive vice-president of Newport Industries Company, New York, a division of Heyden Newport Chemical Corporation.

Word has been received of the death of Ralph D. Brown on April 5. Brown studied electrical engineering, but remained at the Institute for only two years. We have not had an address for him for several years, but it is understood that he died at Main Street, South Chatham, Mass. — CHARLES P. FISKE, *President*, Cold Spring Farm, Bath, Maine; H. B. RICHMOND, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass.; HERMAN A. AFFEL, *Assistant Secretary*, and *Class Agent*, R.F.D. 2, Oakland, Maine.

'15

Classmates, in only a few days about 60 of us will be gathering at Snow Inn, Harwichport (on Cape Cod), for our 45th reunion. It's getting late — we're not getting any younger! If you haven't already planned to be there, how about a last minute decision? Come on along; no preparation necessary. There'll be a banner welcome and reservation for you when you arrive. How about it? It's a wonderful place — Wink, Max and the Pirate have

set it up delightfully for us. That sail around the Cape on that big schooner will be a grand experience. George and his committee will greet everyone Friday noon in Room 1-132 at M.I.T. and provide transportation to the Cape. Barbara Thomas will be there, too, handing out identification badges.

Al Sampson and Barbara invite you all with your guests to the big class cocktail party on Monday afternoon, June 13, four o'clock, at the M.I.T. Faculty Club. This is free to all. Wink, Max and I will be at Snow Inn Friday morning to greet all classmates arriving early. It will be wonderful to see you there. We'll room you men as you arrive and we'll do the best we can — all nice rooms with baths, phones and windows! Elevators, too. In the July column we'll report the big Boston class dinner held on May 6 to set up final reunion plans. If you can't attend the full reunion, at least get there for the class picture, Saturday afternoon at five o'clock.

In the middle of March, Alice Anderson and Henry Daley wrote that Andy's last operation had been successful so that he could wear dark glasses with special pin holes permitting him to look straight ahead. He was home and should have a normal recovery. He plans to be with us at the reunion. That's real class spirit for you! Nice going, Herb, and we'll all be happy to have you with us. Henry continued about the cold and snow in Philadelphia at the time, and said that with the winter Florida has had, Jim Tobey at Palm Beach must be wondering whoever called it "the sunny South." Henry mourns with the rest of us for those favored classmates touring South and Central America on world cruises — ah me!

Around the middle of March, the Boston daily papers carried a quarter-page ad by the New England Trust Company describing the expansion and diversification of the business of the Lombard Governor Corporation, Ashland, Mass. In part it read: "The company continues to prosper under the able leadership of Max Woythaler, President since late 1957." That's Max, our class agent. Congratulations to him. It's just too bad that in the same ad on page 47 of the March Review, Max was not identified as "M.I.T.'15."

Wally Pike sent this clipping from *The Engineering News-Record*: "W. R. Holway and Associates, Tulsa's oldest engineering firm, and Cornett, Wood and Associates, also of Tulsa, have merged to form Holway Engineers, Inc. The new company will specialize in consultant work in sanitary, structural, hydraulic, mechanical and electrical engineering. W. R. Holway heads the firm. Mr. Holway, who established Tulsa's first engineering firm in 1920, is the designer of the Tulsa water supply system. His firm did consulting work on a water supply system for Russia in 1929 and also for Cuba. Cornett, Wood and Associates was formed in 1954 and did work in sanitary and structural engineering. The firm designed the highway bridge across the Oologah reservoir spillway and the five million dollar outlet works at Oologah dam." Congratulations to our own Bill Holway on this big deal. . . . It will be a pleasure to see you all again at the reunion. — AZEL W. MACK, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass.

'16

It's here! The 44th reunion! At Chatham Bars Inn, Chatham, Mass., 'way out on the Cape. The dates are June 10, 11, and 12, Friday, Saturday, and Sunday. Advance returns indicate a good attendance again — the golf course is just waiting for attention — so come, bring your wife, and join the bunch for a delightful weekend with excellent food and salty sea surroundings.

Our heartiest congratulations to Bob Wilson, newly appointed member of the U. S. Atomic Energy Commission (as of March, 1960). It gives us new confidence in the quality of top appointments. The class is again proud of Bob, trusts he will find the work challenging and interesting, and trusts especially that he will be at the reunion on the Cape — he should know that there, there will be a better chance for more birdies! He has removed his office from South La Salle Street in Chicago to the AEC in Washington. An announcement points out that the Commissioners generally divide their time between their Germantown, Md., headquarters and their Washington office. A note from Bob on April 11 indicates that for the next three months, he'd be glad to have communications sent to him at The Westchester, 4000 Cathedral Avenue, NW.

And where do you think Ralph Fletcher's March 18 post card came from? Of course, of course, and pasted with Helvetia stamps! And what is the picture on the card about? It reads: "Parsennbahn gegen Dischmatal und Sertigal. Doftälli-Abfahrt." And the skiers in the semi-foreground look almost as though they came from New Hampshire or West Chelmsford or some such place. The message: "This is the life. En route home today. See you in June. Tried to reach O. F. Evans by phone March 1. Reported to be teaching school. Type unknown."

Vert Young continues to ply his new-found hobby of rock collecting even when out of the country. On his return from Honduras late in February, he wrote: "Had lots of fun collecting rocks in Honduras, a very interesting country from a geological standpoint. Had a letter from Tom Little mentioning the account of the safari in the Alumni News but I guess my copy has not yet arrived." At the reunion, ask to see Vert's graphic account of his African safari with his wife in 1959 — many interesting episodes had to be teaching school. Type unknown." given in this column.

In the middle of March, Joe Barker wrote: "Just back from L.A. and S.F. Saw Francis Stern and had a grand dinner and chat with him, thanks to your note and Jimmie Evans's telephone call." Joe says that Francis had a very serious auto accident some weeks before. Crossing an intersection with the lights, his car was crashed into by a non-stop motorist. Mrs. Stern was severely injured — both clavicles broken and other contusions. Further: "She is completely immobilized with a cast on both shoulders. Francis had a severe eye injury but it is clearing up gradually. Didn't have time to call Ken

Sully or Maynard Guss for this was a very rush trip — into L.A. Wednesday afternoon and off to S.F. Thursday evening."

Earl Mellen, in his retirement from Daystrom (and Weston Electrical Instruments), writes on a new letterhead — the Cross Malaker Laboratories of Mountain-side, N.J. Asking him "how come," he explains that he is a director of this company, which is a subsidiary of the Cross Company of Detroit (Ralph Cross '33). Basically, the company is engaged in space technology, research and development in the fields of electronics, cryogenics, astronautics, and atomic energy. Earle also says: "I have taken the liberty of enclosing a copy of the 'thank you' letter from Ralph Fletcher in which he has a picture of those in attendance when the chair presentation was made. I am wondering if you would take the trouble to name those present because I do not recognize too many. Time has a way of changing the appearance of many of those we knew in our class, and some more of them I have not seen for a number of years."

Dick Berger drops us a few lines from Bridgeport between customers at the office. As President of Cancer Prevention, Inc., he's always glad to receive clippings and reference articles on the subject. Working on his latest release he says: "After more than 100 starts on the latest cancer prevention literature, I now have it well under way. The difficulty is to complete projects of this type, magnitude and importance in spare time — as an avocation. I am determined that it will be printed definitely before summer, and it should be the finest."

We have word from Arvin Page, who hasn't owed us a thing ever since his 29-page letter last June. Arvin and your secretary have mutual friends in the Western Electric Company, in pretty Winston-Salem. Arvin writes: "Now that our record snow has disappeared, Claire and I are leaving for a week or so in Florida, stopping on the way in Savannah to attend a zone meeting of the State Registration Boards for engineers. I have been on the Board for about seven years and find the work very interesting, but I am about to retire from that, too. While I have been officially retired, I still do work for the Bahnson Company on a part-time basis — no responsibilities and no deadline dates. It is working out very well. Doubt if we can see you in June but we'll be on hand in 1961."

Coke Flannagan, a neighbor in Mountain Lakes for many years, writes from near Inverness, Fla., where he has been enjoying things since his retirement from Bell Labs some seven years ago. Claims he is inherently lazy and that possibly this tendency was best illustrated "by my rush to retire immediately upon reaching the tender age of sixty." Says further: "Fortunately I took to retirement like a duck does to water and believe these seven years have been my happiest." About three acres of Coke's place near Inverness is a peninsula jutting into a lake. From the air, it appears much like Florida on the map of the U.S. He says the former owner left them a fine selection of camellias, azaleas and gardenias,

the care of which furnishes plenty of outdoor activity. "Both Alma and I have enjoyed very good health — possibly our outdoor activity has helped in this respect. John is a physicist, employed in Newport News, Va. He has one son, Robert Coke, a little over two years old."

Nat Warshaw came back to Hull for good last July and says now he doesn't know why he ever went to Philly in the first place. Nat now writes as vice-president on the letterhead of Barry Hyman Company, Inc., Engineered Material Handling Systems. He'll be there. Where? The reunion — at Chatham — June 10-12.

One letter this month came from John Hood down in Cooleemee, N.C. John starts by saying that back in 1957 when we wrote for news for the column, he was about to reply when he broke a 36-year married-life record of having been off the job but one day on account of sickness. After one operation he lacked three days of being out of work for two months and ready to go back when a relapse put him back in the hospital for a second operation and he was out a second two months. But his health has been excellent since then. He writes: "Approaching 68 I can still do a good day's work and plan to continue as long as I am able and the company is willing. If Douglas MacArthur can do it, why can't I? Retirement will not be good for my bad habit of biting my fingernails."

"It was a great sorrow to me to hear of the serious illness of Willard Crandall and I do hope that he will have the same luck as befell me as regards recovery. The partial retirement of my good friend Stephen Simpson has been noted. It should please him to know that graduates of Davidson, Catawba, and Clemson Colleges working in our laboratory are hero-worshippers of his book on 'Quantitative Analysis' but even with Steve's help they have their troubles." After graduation John spent one pleasant year at Tech as an instructor in chemistry of foods and water under Professor A. G. Woodman. Eighteen months were spent working for Uncle Sam as a private in the Chemical Warfare Service in World War I. John says: "That old Uncle was never forgiven for not having made me at least a first-class private for all the work done and poison gases consumed for him. Two years were thoroughly enjoyed as chemist for the Esleek Manufacturing Company, makers of high-grade writing papers. From then on my work has had to do with problems pertaining to the weaving, bleaching, dyeing, printing, and finishing of cotton, wool, and synthetic fabrics. My time has been about evenly divided, either working for well-known textile mills or as a chemist for chemical manufacturers helping in the application and development of new products for use on textiles. There never has been a dull moment, the work never too routine and in general thoroughly enjoyed. Seven years ago the Erwin Mills offered me a position as a chemist in their research and development laboratory in Cooleemee, where our work has to do with problems related to the weaving, bleaching, dyeing, and finishing of various types of cloth. Bidding adieu after 15 years with the American Cyanamid Company,

at their research laboratories at Stamford, Conn., my wife and I moved to Cooleemee and the Sunny South (the past month, the Snowy South), where upon buying our home we became members of the landed aristocracy of Cooleemee. I also became a 'southern gentleman' after imbibing 21 pints of genuine 'southern blood' during my operation which they say also made me talk like a real Southerner. We have enjoyed the past seven years in Cooleemee and plan to remain after my retirement."

As most of us know, Blythe Stason is the dean of the University of Michigan Law School in Ann Arbor, and has been for the last 21 years. We firmly believe, without any research whatsoever, that he is the only M.I.T. electrical engineering graduate who has been the dean of any law school in the country of the standing of the University of Michigan, or of any other standing. To appreciate Blythe's career in law, since entering the profession in 1922 and becoming a member of the faculty of the Law School in 1924, one has only to consult *Who's Who*. He has been Michigan Commissioner, National Conference of Commissioners on Uniform State Laws, 1933—; Chairman, Special Committee on Atomic Energy Law, American Bar Association, 1954-57; member, Board of Commissioners, State Bar of Michigan, 1952—; Managing Director, Fund for Peaceful Atomic Development, 1955—; and many et ceteras.

Next September, Blythe reaches the official age of retirement, but it is apparent he is not to take up a life of leisure. Instead, he will become administrator of the American Bar Foundation and will be in Chicago where the headquarters are located. The American Bar Foundation is the research and library arm of the American Bar Association, the principal legal association of the U.S. with upwards of 100,000 members. Blythe notes: "I shall continue my activity with the Power Reactor Development Company, of which I have been a member of the Board of Trustees from the beginning. Also, I am chairman of the safety committee of the Board and in that capacity I have a first-class opportunity to become acquainted with nuclear scientists and engineers." He is also the author of two books with editions from 1935 to 1959, and joint author of a third. Continued congratulations, Blythe, and may the new job be everything you could wish!

The 1916 class luncheons in New York are held on the Thursdays following the first Monday of each month at noon in the M.I.T. Club of New York rooms in the Hotel Biltmore, right next to the Grand Central Station. Herb Mendelson and your secretary joined the 1917 group at the April luncheon and it seemed as though everyone asked for Steve Brophy and Jim Evans. Jim's absence again was explained by his fairly-new-found popularity in Paterson, N.J., high schools where he has become the No. 1 faculty and student choice as a substitute prof in math. He even borrows that famous text by Goodwin, "Precision of Measurements," to answer embarrassing questions in the college-prep classes. We hadn't heard from Len Stone since he retired and went tripping to Hawaii. Dix Proctor '17, was

just back from his 17th or 19th trip to faraway places. This time it was Australia, New Zealand, and Tasmania. He looks well and speaks of the extreme friendliness of the New Zealanders—how for example a bus driver holds up his run for 20 minutes, explains to the other passengers that he just had to show visitors from the U.S. some of the local beauty spots, and beams as the other passengers smile with full understanding. Other 1917ers included Admiral Sullivan, lately from Tokyo, now settling in Tom's River, N.J., Dick Loengard, and Bob Scannel.

The letter of the month came from Spain — from none other than Irv McDaniel, at the request, he says, of Jim Evans who calls him "the gypsy in our class." But Irv, "after seeing 800 (repeat, 800) gypsies in Granada," rejects the appellation and explains in colorful phrases. Irv and his wife Katherine went over last June and are really seeing Europe — and for the first time. They got a Mercedes in Hamburg and what they have enjoyed most are the side roads that few tourists ever visit. He says: "Of course we did the things all tourists are supposed to do, museums, art galleries, cathedrals, etc. My old course in E. C. and A. under Jojo Sumner came in handy. We visited Norway, Sweden, Denmark, Germany, Swiss Alps, Austria, Yugoslavia, Italy, lower France, and then came down here for the winter. We had no schedules, no reservations, and everything worked out perfectly.

"We flew over to West Berlin and then took the 'PX' tour of East Berlin and saw all the things that the Russians didn't want us to see. This should be mandatory for all Americans, because if you have any mental reservations about their political philosophy you will lose them there. I would like to write a book on all the things I saw there. The people seemed well-fed, and had poor, meager clothing, but it was the expressions on their faces that told the story. We wouldn't have missed driving through Yugoslavia for anything, but we don't recommend it as it was rugged — even had to wash my teeth in beer. Also, if they survive they will need a lot of financial help."

Irv then writes of several things we'll have to hold over for the next issue — the Alps they have climbed, the opera in Vienna, the McDaniel System at roulette, and goes into some detail on night clubs. "You really can't know a place unless you understand the night clubs, and we really wanted to know what these countries are like," he said. "I hope that explains my interest!" He opined that the night clubs in Rome had the most fun. "There was one there that had a wonderful floor show. The main act was a Sheik selling his harem at auction. There was one gal I wanted Kay to buy for me, but she wasn't playing games. In fact she was *irate*. When the act was over, Kay got a bigger hand than the act. The management offered her a job as part of the act at 5,000 per week, if she would play it straight. Of course it was in lira but that is still over \$10.00 per week." Further in this vein in the next issue.

Irv says his next trip is down to Morocco for about three weeks, then back to

Torremolinos until the end of May, when they will do a lot of traveling by ship and boat to Asia Minor, Greece, Aegean Islands, and Istanbul. Then they'll pick up their Mercedes and do some more driving around to places they haven't seen — Carinthia, Liechtenstein, Andorra, Portugal, Northern Spain, etc. "We plan to be back here in October and spend another winter here. We have just had the most perfect winter we have ever experienced. Gibraltar, Granada, Sevilla, Cordova — all are only a couple of hours away. I am sorry we won't be at the reunion this year, but we have already made plans for next year, and those plans include the 45th. If any '16er is headed this way, be sure to have him look us up. Dick Whitney '17, has just left us and we expect Walt Keith '14, and his wife any day now. Give my very best regards to every one at the reunion and tell Ralph and Jimmy what a swell job I think they are doing — goes double for you." Irv's address is Villa Oropendola, Arroyo de Miel, Torremolinos, Malaga, Spain.

Once again, we close. Irv's letter reminds us to repeat an old thought: if you plan traveling anywhere at all, in the U.S. or abroad, send Ralph Fletcher or your secretary a card if you want addresses of any '16ers who may be near wherever you are going. We've had reports of near-misses — failures to make a contact through lack of information — in Lisbon, Athens, and West Palm Beach. Write a little but write often to — HAROLD F. DODGE, *Secretary*, 96 Briarcliff Road, Mountain Lakes, N.J.; or to RALPH A. FLETCHER, *President*, Box 71, West Chelmsford, Mass.

'17

Retirements continue to make up a considerable amount of 1917 news. Stanwood Barrows writes from Groton, Conn.: "I have been connected with the design department of the Electric Boat Division of General Dynamics Corporation since September, 1931, and most of this time have been in charge of submarine ventilation design. As of April 1, I am to start being a gentleman of leisure. Eventually, I will probably scout around for a job just to keep busy. Everyone assumes that a retired person immediately heads for Florida, but I don't think I would enjoy it the year round. I am a great booster for the particular climate on Long Island Sound. Besides, my elder son Richard, who is supervisor in electric design at Electric Boat Division, lives just around the corner from me with his wife and four children — two boys and two girls. I, certainly, don't wish to move any great distance from them.

"I hope to take about three weeks for a trip to Peoria, Ill., to visit my younger son Robert, who has made a career of the Air Force. After arriving back here, perhaps in May, I shall see what I can do about improving my golf game. I am such an enthusiast for the noble game that a company crowd ran a retirement party for me last Sunday at the submarine base in Groton, which has a nine hole course. Forty of them entered a tourna-

ment in the morning, the winner to receive the S. R. Barrows trophy. This was followed by a luncheon at the 19th hole at which about 70 were present.

"Recently Mrs. Barrows and I saw Gordon Shand in New York City. Gordon is managing editor of the New York *Daily News*. We had a delightful visit and luncheon with him in the skytop dining room of the *News* Building. He and I were boyhood friends. He seems to be holding his age very well. . . . Although I haven't seen George Henderson (Captain U.S.N., ret.) for a long time, we continue to correspond. I recently received a card from him from Jamaica, which he said was a golfer's paradise. You will recall that George is one of the star golfers of our class. He had a 76 at Wentworth-by-the-Sea at our last five-year reunion. George wrote me that his wife Eleanor had passed away. Please convey my best regards to all those from M.I.T. who may remember me."

John Holton writes from Syracuse, N.Y.: "Yes, I have joined the '65 Club.' I was to have retired the last day of March, but the United Steelworkers have called a very unjustified strike on Carrier Corporation, and I have been asked to help out in connection with my regular work of long-range planning. In all probability, I will spend another three or four months before actually leaving active duty. I have been looking forward to retirement with great enthusiasm. I have many projects in which I am interested. One of those projects, which will go forward regardless of circumstances, is the design and construction of a home on the state road along the east side of Skaneateles Lake, where we have a gorgeous view of more than 10 miles over the lake. Our home will be located within three miles of our summer camp directly on the lake. We will retain our camp as it will be a great convenience for entertaining our family and grandchildren, as well as our friends, in both summer and winter.

"Of our four children, three are living within two or three hundred miles, namely, Springfield, Mass., New York City, and Boston. The fourth, M.I.T. '57, is working as a chemical engineer for Cowles Chemical Company, located at Skaneateles Falls. All are married now. We have seven grandchildren for our enjoyment. I am looking forward to our 45th reunion, and illness will be the only thing to prevent my attendance."

Our class president, Ray Stevens, will start this spring to polish up his golf game for our next reunion tournament. An Arthur D. Little news release of March 7 reads as follows: "Lt. General James M. Gavin (U.S.A. Ret.) has been elected president of Arthur D. Little, Inc. He takes over the international research company as the fourth president in its 74 years of service to industry. Raymond Stevens, retiring president of A.D.L., describes the past year as one of the most successful in the company's history. In addition to significant professional accomplishments, the company did a business of \$19 million to show an increase of more than 15 per cent from the year before. Mr. Stevens, who has been with A.D.L. for 40 years, has been named chairman of the Executive Committee."

Loosh Hill, esteemed custodian of class funds, reports that he has recently joined the retired age group, but to quote Loosh: "As yet I do not propose to join it. Oddly enough, said milestone was passed more or less uncomfortably in the Peter Bent Brigham Hospital, Boston. On February 8 sundry distinguished surgeons invaded the privacy of my insides for some five hours putting in new Teflon tubing, which I can report with authority works well. I am still at home, resting somewhat unhappily, but with some expectations of risking a visit to the office next week." Loosh contributes the following which appeared recently in the *Andover Bulletin*, 1912 class notes, presumably representative of many of their class: "There's nothing whatever the matter with me; I'm just as healthy as can be; I have arthritis in both my knees; And when I walk, I talk with a wheeze; My pulse is weak and my blood is thin; But I'm awfully well for the shape I'm in. (Anonymous)."

Barney Dodge has undertaken quite a schedule of lectures this spring. A news release reads: "Dr. Barnett F. Dodge, professor and chairman of the chemical engineering department of Yale University, will discuss 'Fresh Water From the Ocean and Other Saline Waters' as a Sigma Xi national lecturer at a number of colleges and universities." About 20 are mentioned in the west and middle west: Colorado, Wyoming, Utah, Montana, North and South Dakota, Nebraska, Kansas and Missouri. The Alabama lecture is the only one in the south.

Dick Whitney made an interesting trip this March which he writes of as follows: "On March 6 I took advantage of MATS space available privilege extended to retired officers and flew from McGuire Air Force Base to Madrid and thence via Liberia airlines to Malaga. About six miles from Malaga in a small seaside community I caught up with Irving B. McDaniel '16 (Captain U.S.N., ret.) and his lovely wife Kay who have been spending the winter there. I had a swell visit with them for a week and through them met a large number of admirals and wives. As Irv and Kay were leaving to visit Morocco I rented a car in Gibraltar and drove to Granada, Seville and Lisbon, then back to Madrid where I caught MATS and got home on the 27th. Although the trip was somewhat hurried I thoroughly enjoyed it and would like to return some time. My interest now is to get my 34-foot cruiser, *Barjan*, ready for exploring the reaches of Chesapeake Bay. I look forward to June, 1962, and the reunion."

The following advice may be of interest to habitual smokers: "Don't smoke in bed — the ashes that fall on the floor may be your own." — W. I. McNEILL, *Secretary*, 107 Wood Pond Road, West Hartford 7, Conn.; STANLEY C. DUNNING, *Assistant Secretary and Class Agent*, 21 Washington Avenue, Cambridge 40, Mass.

'18

"Life is a great bundle of little things," says the Professor at the Breakfast Table. For some, the great bundle adds up to some fairly big things. Ken was on a trol-

ley car going along Boylston Street the first time he saw the old Rogers Building. It was spring and students were gathered on the steps singing. "I wish I could go there to college," he thought, not realizing that the opportunity for a college education would be his. He prepared at the Mechanic Arts High School near the old Mechanics Building on Huntington Avenue, and worked, I think, for a couple of years before overcoming an undeserved adversity. Finally, all the events fell into place which gave him the official right to sing on Rogers steps. Meanwhile, he had graduated from the Lowell Institute. That is how he came to be older by three years than most of us, and more emotionally mature even than some of us ever became. He was a member of the winning tug-of-war team both Freshman and Sophomore years, and class treasurer those same two years. He worked on *The Tech* to become associate editor and editor-in-chief, thereby foreshadowing his future. This dedicated apprenticeship was carried even further, despite the distraction of some classes in architecture, when he became editor-in-chief of *Technique*. Naturally, he was on the executive committee and the Institute committee.

When the war came he entered the intensive Naval Architecture course and landed in the Boston Naval Yard with a group of us, for intensive practical training. The international unpleasantness came to an end at a frustrating time when we had been recommended for our commissions but not yet inducted, despite which two or three outstanding men in the group were given a stripe and a half in the Construction Corps. He was among them, serving two years at the Portsmouth Naval Yard, where he nursed a submarine from dry land to swimming under water.

In 1920 he went to the Far East (incidentally what ever happened to change the Near East into the Middle East?) as a sales representative for the Angus Company, Ltd., of Calcutta, India. On returning to Boston, he was personnel manager of the Division of Industrial Co-operation and Research at M.I.T. until 1926. Then he really found his niche with *Pencil Points*, an architectural magazine of which he was associate editor from 1926 to 1931, managing editor from then till 1936, and then editor for the succeeding decade. He was later a consulting editor for the book department of the Reinhold Publishing Corporation, and from 1948 to 1951 book department editor of F. W. Dodge Corporation. He was a member of the American Institute of Architects and former president of the Vermont chapter. He belonged also to the Architectural League of New York, the New York Building Congress, the Citizens Housing Council of New York, the Century Association, and the National Press Club. He had been the professional advisor to many national architectural competitions, for he had a wonderful way of perceiving how to keep everybody in something better than waist-high, childish behavior. Most recently he had been acting as a consultant on public relations for architects.

On March 16, after a brief illness, he died gently, as he had always lived graciously, at his home in Germantown, Pa. He is survived by his wife, the former

Miss Rose Lawson; a son, Kenneth, Jr., of Sunnydale, Calif., and a daughter, Mrs. William D. Leach, of Pawlet, Vt. In addition to them, his fraternity brothers at Lambda Chi Alpha, Pi Delta Epsilon, Beaver, and Osiris (the secret M.I.T. student governing body) will mourn the death at age 66 of Kenneth Reid. He was able to encourage, animate, and heal most of those whose lives were touched by his. God must feel a great satisfaction when he watches such a man gather his great bundle of little things into something so good. Little did I realize the day when he comforted me as a Freshman that I would be able to pay him proper tribute 46 years later. Clarence Fuller and Pete Sanger both sent me clippings from the New York papers.

Courtesy of Pete Sanger, I also have news that Harold Y. Keeler died in Huntington, W. Va., date not available. . . . Dr. William W. Peter completed his great bundle of little things at Port Republic, Md., on March 31, 1959, and Ernest W. Hudder finished his in Wenham, Mass., on December 6. I regret that I have no further details concerning their gathering over the long pull of the years. — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey Center, N. H.

'19

A letter has been received from Dutch Seifert, Vice-president of the M.I.T. Club of Chicago. His efforts in the Chicago area helped a great deal in making possible 1919's fine contribution to the Alumni Fund at our 40th reunion. Dutch is president of American Chemical Service, Inc., and his outside activities are many, including education counselor for M.I.T., and helping to run the symphony orchestra and yacht clubs.

Tim Shea, Vice-president of the Western Electric Company, New York City, heads a group of engineers, scientists and industrial leaders from universities and industry who met at the U. S. Naval Air Station, Jacksonville, Fla., under the auspices of the National Academy of Sciences and the National Research Council, March 18-27, 1960. Termed the Navy Study Group of Shipbuilding and Modernization, they will study the present and future composition of the fleet and its future shipbuilding and modernization plans.

The house organ of Simplex recently published a biography of Don Kitchin. Don has presented papers to the Science and Electronics Division of the American Institute of Electrical Engineers, and has been invited by both Yale and Johns Hopkins to show his movies on tree breakdowns in nine different types of insulation. Besides his passion for swimming, Don teaches in church school, is an examiner in the Boy Scouts in signaling, and is a member of the visiting committee to the Department of Mathematics at M.I.T.

The late Dr. Kenneth S. M. Davidson received posthumously the initial award of the new Davidson Medal, sponsored by the Society of Naval Architects and Marine Engineers. The award was made for outstanding accomplishments in scien-

tific ship research, and presented to Mrs. Davidson by Vice Admiral E. L. Cochrane, USN (Ret.).

Edward Richardson writes that he missed four months of work because of ill health — flu and pneumonia. He has published a paper in the *Journal of the American Society of Civil Engineers*, paper No. 2383, February, 1960. The title of the paper is "The Builder of the Newport (Rhode Island) Tower." . . . John Stevens retired the first of this year. He is doing some consulting work, so long as it doesn't interfere too much with golf, travel, fishing and boating. . . . Jim Strobbridge writes that he is chairman of the Board of the Strobbridge Company. . . . Ernest Schindler writes that he is still hanging on. He has been a stationer since 1922.

Stan Weymouth, in Augusta, Maine, is in his 41st year with the Maine State Highway Commission. He is looking forward to Alumni Day, June 13. . . . Ben Sherman is president of the Patent Law Association of Chicago, and is actively engaged in the practice of patent law. . . . Arthur Page has been living in Hollywood, Fla., for two years, and is loving it. . . . Kenneth Wood is still with the Rexall Drug Company in St. Louis, Mo.

The new address of Nai H. Leung is Pacific Trading and Agency Company, Ltd., 220 Des Voeux Road, C. Hong Kong. . . . Frederick E. Claflin has moved from Marlboro, Mass., to 333 Oak Drive, Ormond Beach, Fla. . . . Does anyone have new addresses for Harry A. Zimmerman, Jr., last address, Warren, Ohio, or Horace D. White, Lake Shore Drive, St. Joseph, Mich.? . . . Izzy Paterson attended the 1919 luncheon at the M.I.T. club in New York on April 8. He has just returned from a trip to Europe, one week on business, and a three weeks' pleasure trip in Ireland, Scotland and England.

The Class of 1919 holds a monthly luncheon at the M.I.T. club in the Biltmore Hotel, New York. Alumni from out of town are cordially invited, the first Friday of the first full week of the month. — EUGENE R. SMOLEY, *Secretary*, 30 School Lane, Scarsdale, N. Y.

'20

Your secretary was pleased and honored to receive a visit from Dorothea Brownell Rathbone. Dorothea has had a full life and a busy one. She is a credit to her class. Dorothea provided further information about Ed Burdell. Ed retired as president of the Cooper Union after 22 years and the title of president emeritus was conferred upon him by the trustees of the Cooper Union on February 29. Ed's idea of retirement may be gathered from the fact that two days later he and Mrs. Burdell were on the high seas bound for Ankara where he will become president of the new Middle East Technical University. His decision to take the Ankara post was the result of an urgent invitation from UNESCO and pressure from governmental authorities, as a result of which he asked the trustees for permission to retire in February of this year rather than in June 1961 as he had previously planned.

Among the honors accorded him were a citation from the Cooper Union alumni association and the medallion of the City of New York presented at a testimonial dinner sponsored by the Third Avenue Association and the Washington Square Association with which he had been prominently associated, and by the City Department of Commerce and Public Events. The Middle East Technical University where Dr. Burdell will be president is sponsored by UNESCO and the Turkish government. It now has an enrollment of about 600 students but is starting an expansion program pointed toward developing a regional university for 10,000 students from the countries of the Middle East. The Class of 1920 can well be proud of Ed and his eminent career.

Those attending the 40th reunion and impressed with the charm of Cape Cod might well take a leaf from Pete Lavedan's book. Pete's home is at Old Mill Point in West Harwich, a delightful location if you ask me. . . . Art Merriman's present address is Cleveland Heights, Ohio, 2184 Westminster Road. . . . Dr. George Hanson is in Ottawa, Ont., 790 Eastbourne Avenue. . . . Snug Etter may be found at 961 Mills Tower, San Francisco.

Our distinguished world traveler and bon vivant, Chuck Reed, has been at it again. Recently he visited his son, Edwin, M.I.T. '45, and his three grandchildren in Houston. Chuck's younger son David is to get his Ph.D. in philosophy at Yale this June. He has taught this subject at William and Mary and at Muhlenberg where he will be an associate professor next term. The above information was received via a card mailed from the Virgin Islands, so you can see Chuck is still on the move.

Word has been received from Mrs. Benjamin West that Ben passed away November 23, 1959. Ben long had been a resident of Florida and his home had been in Tampa. Accounts of his interesting career have appeared in previous issues of *The Review*.

By the time these notes appear, our 40th reunion should almost be here. I don't think I shall have to take it back in the next issue when I say that this should be the most enjoyable and successful reunion yet. All advance signs certainly point that way. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

'21

"And what is so rare as a day in June?" The lucky members of the Class of 1921 who attended our interim reunion in Mexico City as guests of the M.I.T. Club of Mexico now know that a very real answer to the question propounded by Mr. Lowell is "March 10, 11, 12 and 13, 1960." Those rare days saw a group of 34, including 1921 wives and guests, have the time of their lives as we did previously, during the equally rare days of our 1958 winter reunion in Havana, with the members of the M.I.T. Club of Cuba.

To all the members of the M.I.T. Club of Mexico; to its President and chief host and his lovely lady, Nish Cornish '24 and Luisa Cornish; to our two classmates in

Mexico and their wives, Viviano and Maria Helena Valdes and Dr. Sandoval and Maria Luisa Vallarta; and to all here and in our neighboring republic who helped make the reunion so enjoyable, go our very special thanks and public acknowledgement of their kindness and courtesy.

To Edouard N. Dubé, Boston consulting engineer, and his gracious wife, Maida, go the everlasting thanks of the appreciative 1921 group who attended the reunion and the hearty approbation of our entire class for their tremendous task in successfully engineering the whole project. It was Chick and Maida who first proposed the idea of the jaunt at the 1921 dinner gathering last Alumni Day, in June, 1959. It was this same pair who contacted the M.I.T. Club of Mexico, sent out the mailings to the class and publicity for these class notes, and who followed up with special correspondence with those who said they would attend. They assumed responsibility for all the arrangements here and south of the border and carried out every detail cheerfully, modestly, and most efficiently, asking counsel and aid in a few instances but generally accomplishing by themselves the many chores necessary to complete this major undertaking. We add our own personal thanks for their considerable help in so thoroughly and accurately reporting the entire event in the notes which follow.

Maxine and your secretary, who were unable to attend, also wish to acknowledge the handsome gifts showered upon us by Nish and Luisa in the form of the attractive M.I.T. Club of Mexico's 50th anniversary stein for our almost complete collection of M.I.T. steins and for the unusual tooled-leather, initialed billfold memento of the Club's 12th annual Fiesta. Helen and Ray St. Laurent sent us a beautifully embroidered Mexican tablecloth and napkins with the Club's anniversary seal and a huge set of mint postage stamps for our collection. We also received a giant colored post card of the Quetzalcoatl mural on one of the modern University City buildings which was signed by all of the 1921 contingent with their greetings. Sincere thanks to you all.

Now stand by for Chick Dubé's own report, "writ by hand" all the way from Cuernavaca to Boston. Says Chick: "I had thought to have written this a few days ago but, to say the least, we have been busy."

"Maida and I left Boston on Wednesday, March 2, and arrived in Guatemala City around noon the next day. We spent the rest of the day recovering from lack of sleep on the plane and took a short walk around to get our bearings. Next day, we explored the city and met Mario Wunderlich '45, who is president of the M.I.T. Club of Guatemala. In the afternoon, he and his wife, Jeanne, a very charming girl, took us out to their home where we met their four children and visited their garden (which should really be printed in capitals). Then they took us out to see their summer place at Lake Amatitlan and in so doing we made a complete circuit of this lovely lake, set into a bowl formed by high mountains. Not too many visitors have an opportunity to see it because it is not as well publi-

cized as Lake Atitlan, where everyone goes.

"Saturday, Sunday and Monday, we hired a car and driver and visited in turn Antigua, the ancient capital of Guatemala, which really needed all three days; Chichicastenango; and finally, Lake Atitlan. There is not enough space to describe all of this. Monday evening upon our return, we entertained the Wunderlichs and they took us to hear a marimba band, which Maida likes very much.

"Tuesday, March 8, at 5 A.M., we arrived at Central Airport, Mexico City. Sitting on a bench were Larc Randall and Phil Nelles, who had just arrived, so we felt entirely at home. This is just as good a place as any to list all the members of the Class of 1921 who were in attendance at this reunion in Mexico City: Ollie and Olive Bades, Ralph and Vina Cooper, Herb DeStaebler, Ed and Maida Dubé, Joe and Grace Gillson, Dug and Betty Jackson, Irv and Ruth Jakobson, Phil Nelles, Jim Parsons, Larc Randall, Ray and Helen St. Laurent, Bill and Mrs. Sanders, Rufe and Madeline Shaw, Roy and Ida Snyder, Fred and Mrs. Crispin (Princeton—guests of the Snyders), Art and Mollie Turner, Viviano and Maria Helena Valdes, Sandoval and Maria Luisa Vallarta, and Miles and Helen Zoller. At the last moment, Mel and Anne Jenney were prevented from leaving Boston by the pressure of his business. Phil Coffin phoned from Florida to say that his doctor would not permit him to go to the high altitude.

"Besides our 1921 contingent, there were at least 50 Alumni, wives and guests from both North and South America in attendance and a large number of the local members of the Club. We met at the Hotel Vasco de Quiroga at noon on Thursday, March 10, for cocktails and to get acquainted. The men were given name cards with beavers attached and the ladies received similar cards with Mexican hats. The ladies were then escorted to the home of Olga and Gus Valdes²⁵ (no relation to our Viviano) for a splendid luncheon.

"Our dinner tables were in the form of a 'U' with the members of the Class of 1921 along one side. The master of ceremonies, Nish Cornish, carried on a running commentary with our class president, Ray St. Laurent. On one of the tosses, I presented to the M.I.T. Club of Mexico a framed illuminated scroll, expressing the sincere appreciation of the entire class and signed by all the men and women representing 1921. The scroll had been beautifully prepared by Ted Steffian, Boston architect and our assistant class secretary. Ray had brought a bottle of Scotch for presentation to a lucky member of the Mexican delegation (Scotch is more than \$14 a bottle here) and, with the assistance of Viviano Valdes, the group drew numbers out of a hat, the one who drew the number 21 being declared the winner.

"That morning, I had scratched my brain to conjure up three verses of *The Stein Song*, telephoned them to Nish and had his secretary prepare 100 copies. On the last verbal toss, the entire 1921 group, led by Herb DeStaebler, sang it and got the rest of those in attendance to join in.

Following this most enjoyable event, we piled into automobiles to go to the National University, where Dr. Vallarta showed us around the various buildings and where we were rejoined by the ladies. Later, we went to the auditorium for what was scheduled as a 'Technological Toot.' Dean George R. Harrison of the M.I.T. School of Science gave a most entertaining and illuminating discourse on 'Servomechanisms in Nature.' Afterwards, we came back to the hotel headquarters for a bite—no, that's impossible, for there are no light meals here!

"On Friday morning, we met again at the Hotel Vasco de Quiroga and members of the M.I.T. Club of Mexico took us out to visit native silver, leather, and other industries. We bought a good deal because it seems so easy when things are quoted in pesos and you feel that it is relatively harmless until you get back to your quarters and realize that the total in dollars can get to be a respectable sum. While there, I bought a silver bowl, the nearest I could find to a Paul Revere bowl, for our 1921 group to present to Luisa and Nish Cornish. Back at the Hotel del Prado, Phil Nelles, Jim Parsons, Larc Randall and the St. Laurents, Jacobsons, Coopers and Dubés walked across the beautiful Almeida Park to the Hotel Cortes for a delightful luncheon on the patio. That stretched out into most of the afternoon, when we all went back for siestas.

"That evening, we met at the *Club de Industriales* for cocktails and a buffet supper. As usual, the meal was sumptuous, but by then we were learning our lesson and did not partake too heartily. The Class of 1921 was honored by our being called to the stage to receive special awards of copper Mexican hats, suitably inscribed for the occasion. Our group picture was taken and I trust it will be available for showing at our 40th reunion next year. Nish Cornish's daughter presented a Mexican dance in native costume. More prizes were drawn and the fortunate 21ers were Viviano and Maria Helena Valdes, Art and Mollie Turner and Ed and Maida Dubé.

"On Saturday, there were visits to native shops and to industrial Mexico. The Turners, Maida and I were conducted on a special sightseeing tour by Viviano and Maria Helena Valdes. All three of us were in Course I and we had been together in many classes and at the M.I.T. summer engineering camp at East Machias, Maine. For us it was a special reunion after all these 39 years. The Valdes were royal hosts and they left nothing undone to show us how happy they were to have us there. The Turners had to leave for a luncheon appointment but we kept on for a thorough visit to Chapultepec Park and Castle, where the Emperor Maximilian and Empress Carlotta lived. Then came another wonderful lunch. The word 'lunch' is misleading; 'full course dinner' is much more accurate.

"That evening, the elaborate *Noche Mexicana* was presented at the home of Nish and Luisa Cornish. To describe the scene and gaiety would take a long time as you will note from the enclosed two pages from a local newspaper, which de-

scribe and picture this particular evening as well as the other events of the Fiesta. The Cornish family has a spectacular garden and the affair was termed one of the most gala outdoor parties in Mexico City. There were booths under overhanging flowers and colored lanterns where special Mexican dishes were served. Tortillas, *puerco*, *bif* and *beans*, every type of *salsa*, cheeses of Mexico, candied jellies and the inevitable *tequila*, *sangrita*, *cerveza* and other brews were available. The local Club members were attired in a varied assortment of native dress, from the ranchero garb of Mexican cattlemen to the beautifully embroidered garments of the Yucatan women. Marimbas were played under the flowering trees amongst the abundant large white calla lilies. Everyone moved around and there was much festivity. The *piñata* mentioned was a gaily colored beaver about seven feet high and which proved to be substantially built. It was hoisted up in the air by rope and pulley and maneuvered about by Cornish's son as each of the guests was given three whacks at it with a stout club. Of course, the batters were first blindfolded by Nish's daughter, whirled around by her, and further confused by the misleading shouts of the spectators. In due course, the beaver was demolished and out of it poured all sorts of favors and prizes. Everyone had a splendid evening.

"On Sunday morning, we all went out in boats to the floating gardens of Xochimilco and once again had a terrific time. For many of us, this may have been one of the high points of the entire trip. We were all extremely gay, so much so as to actually feel young. It was with reluctance that we turned back to town and lunch at the Laredo Restaurant. Next, we went to a bull fight. If I may judge the others by the way Maida and I felt, we went because we did not want to be thought sissies. However, we proved it to be so because we left before the first bull was killed and we were followed by just about the entire party. Guess the matador was something of an amateur and so was the bull, who just wanted to be left alone so he could go back to his pen. In fact, that's where he headed after every pass and they had to chase him to get him back into action. So far as we are concerned, we have seen our first and last bull fight.

"There was just time to get back to our hotel to dress and go to the residence of our Ambassador to Mexico, the Hon. Robert C. Hill, for a reception. This was most enjoyable because I met people who knew some of our friends in Amherst, Mass., and Maida met others who knew our Reading, Mass., neighbors. Then the Valdes couple took the St. Laurents and the Dubés to their home, where we met their oldest daughter, an accomplished pianist. We went to supper at a very fine restaurant, the Parador, at about 10 P.M.

"On Monday morning, the greater part of the visitors went on a tour of Cuernavaca, Taxco and Acapulco. We wanted to do some detailed sightseeing in Puebla and Cholula, so we hired a guide-driver and went on our own.

"I cannot over-emphasize the hospitality which was shown to all of us. For me, it

was especially so of the Valdes family. I had written to Viviano last summer when I originally contacted Nish about the possibility of a 1921 group attending the Fiesta. On the day after our arrival in Mexico City, the Wednesday before the start of festivities, there was a call for me at the hotel when I returned from talking over the details with Nish at his office. It was Viviano, who wanted the Turners and Dubés to go with them for the evening — and what an evening!

"It started with cocktails on the roof of the Tecali Hotel on Chapultepec Hill, possibly comparable to the Top of the Mark in San Francisco. All of Mexico City, the second largest on the American continent, lay before us in a glimmering pattern of lights as far as the eye could reach. Next, we went to the Focolari Restaurant for a grandiose supper. Then to a Spanish gypsy dance place which was small and crowded but whose patrons, including numerous North American visitors, were having the time of their life. Maria Helena, who speaks good English but naturally prefers Spanish, was relieved to find that Maida and I spoke French so that it established a special bond between us. In short, we had a grand evening and turned in in the wee sma' hours.

"I hope there are not too many errors of grammar or spelling (None — Cac) but I have been writing at top speed, confident that you would edit the whole thing and condense such parts as you wanted anyway (Wouldn't think of touching such an excellent report — Cac). If there is anything herein that does not indicate complete enthusiasm with our trip, then I didn't intend it. We had a most wonderful time. The Class of 1921 has some very fine people in it and the members of the M.I.T. Club of Mexico are top-notch hosts. Kindest regards until we see you at Alumni Day in June."

Thanks again, Chick and Maida and our *amigos* in Mexico. May we see you all with the usual large 1921 turnout at Alumni Day on campus in Cambridge, June 13, 1960. And now is the time for all good '21ers to start planning to attend our BIG 40th reunion at the New Ocean House, Swampscott, Mass., in June, 1961, concurrent with the M.I.T. Centennial celebration. — CAROLE A. CLARKE, *Secretary*, International Electric Corporation, Paramus, N. J.; EDWIN T. STEFFIAN, *Assistant Secretary*, Edwin T. Steffian, Architect, 11 Beacon Street, Boston 8, Mass.; MELVIN R. JENNEY, *Fortieth Reunion Chairman*, Kenway, Jenney, Witter and Hildreth, 24 School Street, Boston 8, Mass.

'22

Due to a study of missiles at Fort Bliss, White Sands, and Colorado Springs, your secretary has been neglecting the report on Buffalo's beautiful spring, fine industrial climate and the scenic beauty of Lake Erie and Niagara Falls. Also neglected was the exhortation of our president, Parke Appel, to immediately write him at P. O. Box 137, Dover, Mass., regarding views on the type of class reunion for 1962. His report on pledges for the Class of 1922 Endowed Chair totaling

\$200,000 is thrilling to all. Certainly these next two years can bring the total up to the required \$600,000.

As this article is being published, many of us should be gathering at the Institute to add constructive ideas to this plan as well as how to run each other's business and the number of grandchildren both now and coming along. A note from J. Cecil Aronson tells of his retirement from the engineering, construction, and maintenance department of the Eastman Kodak Company; present address — 1648½ 20th Avenue North, St. Petersburg 13, Fla. . . . Yard Chittick has forwarded a clipping of the *Boston Herald* picturing Filene's Executive Vice-president, Samuel M. Seegal, conducting the induction ceremony for new members of their 25-year service members at their recognition dinner on March 31. . . . We hear indirectly of Don Carpenter's continued travels and his many efforts in behalf of M.I.T. . . . Pictured in a current magazine was the Seattle area encompassing Horace McCurdy's many activities in the Puget Sound area. . . . Again emphasizing a reunion, the committee of Fred Dillon, Bob Tonon, Warren Ferguson and Yard Chittick seem to be favoring a stag affair. Please tell them your views if you plan on attending.

Among the changes of address this month are these: Rudolf Blatter, 5102 Cathedral Avenue, N.W., Washington 16, D.C.; Albert E. Smith, 10 Brooklawn Avenue, Augusta, Maine; Yao-Huang Li, 112 Conaught Road, C., Hong Kong. . . . Our sympathies are extended to the families of Professor Harold A. Zager of Boston College; Leland K. Cowie, St. Louis, Mo.; and Lewis L. Hill, Pittsburgh. — WHITT-WORTH FERGUSON, *Secretary*, 333 Ellicott Street, Buffalo, N. Y.; C. GEORGE DANDROW, *Assistant Secretary*, Johns-Manville Corporation, 22 East 40th Street, New York 16, N. Y.

'23

Mrs. Hayden and I were pleasantly surprised to find that Bert McKittrick and Harriet were co-passengers on a flight to Miami from Boston on March 17. Bert was headed for Miami on business and we were headed for the Grand Cayman, Costa Rica and Guatemala on a vacation and picture taking expedition with a small group of people interested in bird watching. Needless to say, we had a grand time in those colorful countries, and we visited such interesting places as Antigua, Lake Atitlan, the colorful Indian market at Chichicastenango and the Mayan excavations at Tikal. Incidentally, there were two other M.I.T. men on that same flight, Mac Levine and his wife from Worcester and a Mr. Minot and his family (Class of '32) from Boston, so we had a small M.I.T. reunion.

Our tennis playing classmate, Martin Tressel, is still very active in the U.S. Lawn Tennis Association, as he has been reappointed chairman of the Junior Tennis Development Committee for 1960. . . . An item from the public relations division of Texaco indicates that Henry Flynn (formerly manager of the Port Arthur

refinery) has been named general manager of the refining department, effective March 1, 1960. Henry was graduated from the Massachusetts Institute of Technology in 1923 with a B.S. degree in electrical engineering. He joined Texaco in 1927 in New York and was transferred to the Port Arthur works the following year. He was appointed superintendent of manufacturing at Port Arthur in 1953, named general superintendent in 1956, and promoted to works manager in February, 1958.

The publicity department of the Philadelphia Electric Company advises that R. G. Rincliffe, President of Philadelphia Electric Company, was elected president of the Association of Edison Illuminating Companies. It was announced at Boca Raton, Fla. Mr. Rincliffe, who had been serving as a vice-president of the association, was elevated to the top post during the 75th annual meeting of the organization at the Florida resort. The Association of Edison Illuminating Companies, one of the oldest electrical associations in the world, is composed of executives of electric utilities which were originally licensed under Thomas A. Edison patents. The object of the association is the advancement of electric service to the public for light, heat, and power. Mr. Rincliffe, a resident of Swarthmore, has been president of Philadelphia Electric since 1952. He holds directorships in a number of business firms in this area and is active in civic affairs. He last was honored on October 21 when he received the human relations award of the National Conference of Christians and Jews.

Ernest W. Thiele, one of the leading chemical engineers in the United States, retired from Standard Oil of Indiana on March 1, 1960. Dr. Thiele, development co-ordinator at Standard's Whiting research laboratories, joined Standard in 1925 after obtaining his doctorate in chemical engineering at Massachusetts Institute of Technology. While still at M.I.T. he gained early recognition in collaboration with Dr. Warren L. McCabe. The McCabe-Thiele method for calculating distillation problems was so much better than previous methods that it has been the standard ever since it was introduced. At Standard, he previously has held positions as assistant director and associate director of research. Dr. Thiele has played a major part in nearly all areas concerned with developing new methods for refining petroleum. He has been especially active in work on such catalytic processes as cracking. His studies have resulted in 20 technical articles and 30 patents.

The government has drawn upon his technical knowledge on several occasions. During World War II, he was on leave from the company with the Manhattan Project, which ultimately resulted in the atomic bomb. On subsequent assignments, he has given advice and carried out studies for the government in atomic energy and other fields. His plans for the future include a new professional activity — university teaching. Beginning in September, he will be visiting professor in chemical engineering at the University of Notre Dame. His long career in industrial research makes him particularly suited to this new endeavor. Dr. Thiele is a member

of the American Chemical Society, the American Institute of Chemical Engineers, the Chicago Chemists Club, Phi Beta Kappa, and Sigma Xi honorary scientific society. He lives at 7859 South Shore Drive, Chicago.

The March 1960 issue of the A.I.A. Journal published the second and final installment of John Burchard's keynote address to the Fourth AIA-ACSA Teacher's Seminar at Grindstone Lake, Wis., last June. As you all know, John is dean of the School of Humanities and Social Studies at M.I.T. The subject of his address was "Some Keys to Pandora's Jar," and this particular installment dealt with the architect and science, the architect and social science, the teaching of design and the teaching of fundamentals.

A note from Don Severance indicates that Michael F. Yarotsky, 8227 Luella Avenue, Chicago 17, Ill., is now registered as a member of the Class of 1923. Although his bachelor's degree is dated 1923 for some reason he has been associated with the Class of 1920. Welcome to the 1923 fold, Mike.

It is with regret that we report the following deaths of members of our class: Francis Minot, Cotuit, Mass., March 11, 1960; Jonathan Brown, 3rd, Harvard, Mass., March 14, 1960; and W. Alexander Klikoff, Santa Monica, Calif., April 3.

We wish to report the following address changes: Henry F. Culver, Western Electric Company, Hawthorne Station, Chicago 23, Ill.; Henry N. Landis, 4462 Parklane Court, Birmingham, Mich.; and Ping Y. Tang, South Sea Textile Manufacturing Company, Ltd., 502-506 Marina House, Hong Kong. — HERBERT L. HAYDEN, *Secretary*, E. I. du Pont de Nemours and Company, Leominster, Mass.; ALBERT S. REDWAY, *Assistant Secretary*, 47 Deepwood Drive, Hamden 17, Conn.

'24

"An Ike-Assisted Take-Off — As President Eisenhower's jet took off from Ramey Air Force Base in Puerto Rico last week, it left a stream of political smoke behind. With Ike in the big, orange-trimmed plane for a friendly chat en route to Washington went Luis Ferré, 56, the millionaire industrialist, accomplished pianist, and M.I.T. honor graduate who is running for governor on the Statehood Republican Party ticket in the November elections. The trip got big Page One headlines in Puerto Rican newspapers, and Candidate Ferré beamed: 'We talked as one Republican to another.'"

Thus began *Time's* story on our President's visit to Puerto Rico back in March. The major issue of the campaign is commonwealth vs. statehood, and Luis was trying to get a statehood plank in the Republican platform. The story continues with the President's reply: "I think you'd have a better chance, Luis, if you could give the platform committee some indication of public opinion on statehood in Puerto Rico." So it's Luis and Ike now, but, according to inside dope, it won't help him beat Governor Marin. However, he'll undoubtedly do better than he did four years ago, his first try.

Charles Allen Thomas, having reached the age of 60, stepped down as president of Monsanto Chemical to become chairman of the Board of Directors. This is in line with company policy that presidents "should become chairmen no later than when they reach 60 years of age, in order that younger men would be in a position to shoulder the enervating burdens borne by the chief executive." This was all in a news release from Monsanto's public relations office with a nice little personal note attached informing us: "You may be interested to know that Mr. Charles Allen Thomas . . . graduated from M.I.T. in 1924." It was no surprise.

The *USLTA News* for April had a lead story, "The Junior Tennis Development Program" by Martin L. Tressel, chairman of that committee. Martin, an energetic proponent of more and better tennis instruction for youngsters, says that "Junior tennis throughout the nation is on the move. More people have a dedicated interest in the youth tennis movement than ever before."

The Cardinals went to Florida on business, then went over to Fort Lauderdale for a few days of rest and relaxation. The Schoolers didn't need the excuse of business, they just went south. From Boca Raton they wrote: "What a wonderful place! Perhaps we could arrange our next reunion here." Well, the Class of 1921 does it. They've held winter reunions in Cuba (pre-Castro), Mexico (during the Cornish regime), and now plan one in Hawaii! We have an obvious chairman for reunions in exotic places, of course, Bill MacCallum. Bill, by the way, has deserted smoggy California and come back home. He is now based in New York.

We have one governor in the class at least. Paul Cardinal has been on the Board of Governors of the National Vitamin Foundation, Inc., since 1957. Now he is the Foundation treasurer. The March luncheon of the class in New York was graced by the attendance of a couple of out-of-towners, Gib Cowan of Sault Ste. Marie, and Phil Blanchard of New Haven. After the stellar performance of the Cowan family last June, it must have been a comedown for Gib not to be showered with prizes. Others at the luncheon, mostly regular attendants, were Ed Winger, Austin Cooley, Bill Correale, Dick Lassiter, Mal MacNaught, Howard Stevens, Henry Tanck, and Nate Schooler.

Recent visitors in your secretary's office included Dick Lassiter on one of his regular business calls in Cambridge; Cy Duevel, who has a bit to say about foreign competition in the thermos business; and Royce Greatwood, with one of his Japanese confreres, part of the competition.

Reports of returnees from the Fiesta in Mexico City indicate that it was the best ever. Some 90 people from the States were there. Although it wasn't planned this way, the big event, the Noche Americanos, was held in the Nish's garden again, as it was last year. Hate to think what that neat-as-a-pin garden must have looked like the next morning! Don't have a report on the '24 men who attended, but we do know that Andy Kellogg was one.

Two more of our number have passed on. Cecil T. Kelly died January 22. He entered M.I.T. as a junior after gradu-

ating from Reed College, and got his bachelor's in architecture with us. For many years he had been employed by the Chicago Park District. . . . Alan P. Cummings will be remembered by many of you. He got his degree in electrochemical engineering, and went to work for General Electric where he remained. At the time of his death on March 4, he was an electrical engineer in the heavy military department in Syracuse. During World War II, Al was a lieutenant colonel in the Air Corps at Wright Field. He was an active and enthusiastic sailor, and had been commodore of the Onondaga Yacht Club.

High honor has come to J. Adalberto Roig. He has been named trustee of "a college" in Puerto Rico, he didn't specify which one. His main concern at the moment is getting the appropriate regalia to wear in this June's academic procession. . . . We haven't had an address for Jack Cannon since 1930. No one seemed to know where he was. Now, at last, we have word that he's in North Plainfield, N.J., right back where he started from.

See many of you soon on Alumni Day, June 13. — HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

'25

Among the '25 men who gather quite regularly for Alumni Day each June has been Fred J. Duncan, perhaps not as well known to many of you as he has become during the past few years to those of us in the Greater Boston Area. Fred has been a regular attendant at local M.I.T. Alumni affairs. We will miss him at future Alumni Days because Fred died on Monday, April 4, 1960, at the Massachusetts General Hospital, following a brief illness. His home was in West Medford, Mass.; and a Solemn High Mass of Requiem was celebrated on April 7 at St. Raphael's Church in Medford. Fred had been a civil engineer for more than 25 years with the Massachusetts State Public Works Department. He leaves his wife, his mother, one daughter and six sons.

News regarding other members of the class is in extremely short supply this month. We do know that James S. McDonnell, Jr., President of the McDonnell Aircraft Company, has recently been elected Chairman of the Board of Governors of the Aerospace Industries Association.

In connection with plans for the 35th reunion, which will just about be history by the time you read this *Technology Review*, your secretary has been collecting checks — and therefore seeing the signatures of a good many classmates; but I will have to wait until the reunion to get much first-hand information on their activities! — F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge, Mass.

'26

It's fortunate class notes are not published in the summer months. This beautiful April morning here at Pigeon Cove is

too nice to spend indoors — especially with so many projects on the fire. I haven't even taken a look at my boat but the desire to get at the tiller is becoming stronger. My appeals to the class have worked, however, and a few helpful classmates have actually written the notes this month. If you are not among those who have been writing in, please take this as a not-so-gentle hint!

Let's get into the letters. One from Jay Goldberg (11 West 42nd Street, New York City) reads: "We made our first visit to the Orient this year. Sylvia and I flew to Tokyo at the end of September and spent two and a half glorious weeks in Japan. I addressed the Japan Chemical Fibers Association in Tokyo and Osaka, and we received the red-carpet treatment from the moment we arrived at the airport. In addition to spending a few days in Tokyo and Osaka, we visited Hakone (Mt. Fuji), Kyoto, Kamakura and Nikko. Most exciting was a hydroplane flight to the island of Tokushima. Besides visiting plants and textile mills of the leading producers of man-made fibers, we were feted with geisha girl parties, luncheons and dinners, and were particularly fortunate in being invited to the homes of some of our Japanese friends.

"On one occasion, we participated in the entertainment, with Sylvia appropriately dressed in kimono and geisha girl wig, climaxed by her trying to do her old Swanee River tap dance routine sans shoes and giving lessons to the geisha girls on how the Charleston was really done in the '20's. From Tokyo we flew to Hong Kong hoping for a week of peace and quiet, but we were soon occupied running around for fittings on clothes which both of us had made in the shopper's paradise. On our return we spent one day in Honolulu and completed our trip with three days in San Francisco. On May 26 I leave for a three weeks' visit to France, England, Scotland and Ireland. Sylvia is going with me on this trip, too, since she has not gone along on my trips to England and the Continent since 1956. As you might guess, I enjoy my activities immensely. Most of my work is for fiber producers and textile mills in this country and abroad but I find time and fun with occasional special assignments ranging from writing, editing and speech making, to participation in arbitration and patent litigation."

Another classmate, who is also a consultant, writes from his office at 52 Vanderbilt Avenue, New York City. Dudley Parsons says: "I continue to head my own public relations business and you might be interested to know that I was recently elected treasurer of the Foundation for Public Relations Research and Education. (Incidentally, Harold Brayman, your own public relations man, is vice-president.) Our public relations work has been most interesting, lately, especially in helping clients win proxy fights and in serving consulting engineers. I see a few classmates, in particular Dick Pough, who shares offices with us."

The last paragraph aroused my curiosity. I knew the type of work Dick Pough has always been doing but I was not up to the minute so I wrote back to Dudley and asked. He sent me a sheet listing

Dick's activities but the Class of '26 space allotment for class notes would be filled if I copied the sheet. Here are some of Dick's activities, however: President, Natural Area Council; President, Association for the Protection of the Adirondacks; President, John Burroughs Association; Treasurer, U. S. Section, International Council for Bird Preservation; Secretary, Conservation Committee, Boone and Crockett Club; Chairman, Conservation Committee, American Scenic and Historic Preservation Society; Governor, Nature Conservancy; Trustee, American Scenic and Historic Preservation Society; Trustee, National Parks Association; Trustee, Wildlife Preserves; Director, American Committee for International Wild Life Protection; Publications, Audubon Bird Guide (three volumes), Doubleday and Company. The nice thing about Dick Pough's life is that as near as I can make out his vast nature activity is an expanded hobby — quite expanded I would say.

I have one more letter but I'm going to save it for next issue — it's quite unusual. For some time I've known that some classmates' wives read the notes. Finally, I have a contribution to the notes from one of these wives — Mrs. Harry Howard — and next month we shall publish it. . . . Jim Killian addressed the Alumni Council this month and told us of the recent trip he and Mrs. Killian made around the world in 35 days — 27,000 miles, all by jet except from Boston to New York. The mission was educational and most interesting. I'll not attempt to outline it here because it was so important you will read about it elsewhere — probably in *The Technology Review*. Jim gave Emmons Whitcomb's credit for arranging the trip and inspired me to call Emmons (who is Boston's leading travel agent) the next day. He told me that 707's start flying to San Juan from Boston at the end of this month. Therefore, if plans are completed, the next issue of class notes will be composed somewhere in the Caribbean — possibly from the Virgin Islands. Till then — cheerio! — GEORGE WARREN SMITH, *Secretary*, E. I. duPont de Nemours and Company, Inc., 140 Federal Street, Boston, Mass.

'27

Upon hearing that Ted Casselman had moved from Waban, Mass., to Short Hills, N.J., I wrote him a note thinking that this change of address probably involved a move which would be of interest to our class. A prompt reply revealed that Ted, who has been with Stone and Webster Engineering Corporation since late 1940 in New England, was transferred last fall to their New York office.

Also, some interesting news was received from José D. Dominguez concerning his recent move from Santurce, Puerto Rico, to Santiago, Chile. Since graduation José has been with the International Telephone & Telegraph Corporation in various parts of the world, such as Cuba, Puerto Rico, Mexico, Costa Rica and many parts of Europe, and now Chile where he is technical director of the company. They are embarked on a very heavy program of

expansion and development of telephone facilities there. He is delighted to be stationed in Chile, and it was nice hearing from him.

Glenn D. Jackson tells us that his son, Glenn, received his degree in 1955 and is looking forward to going "back to Tech" in June for his fifth reunion. Talking about this reminded him of a few points discussed in Boston last January 25 regarding our 35th reunion, at which meeting a sizable group was present, consisting of: J. Robert Bonnar, Robert M. Bigelow, Joseph C. Burley, Russell E. McCassey, Richard P. Hawkins, William L. Taggart, Jr., Dwight C. Arnold and Glenn. They passed many resolutions before, during and after the Alumni Council meeting at the Faculty Club, one of the resolutions being that "it's later than you think" and all '27 men who are of sound mind should be present in June 1962. Meanwhile, the search continues for a good choice for our reunion, such as Oyster Harbors Club if it can be made available, or possibly Bald Peak Colony Club on the north side of Lake Winnepesaukee.

A recent clipping from the Newark, N.J., *Evening News* states that Donald H. Spitzli has been named a consultant for the fiber department of Air Reduction Chemical Company. The department is evaluating United States markets for special synthetic fibers. Don formerly was director of research for the Linen Thread Company, and also was with Congoleum-Nairn for more than 20 years. He makes his home at 24 Oakridge Avenue, Summit, N.J.

Dr. Harold E. Edgerton, inventor of the electronic flash and world-renowned authority on high-speed photography, has demonstrated a new ultra-high speed flash tube. His latest invention was said to yield up to one billion flashes of light at the extraordinary rate of a single flash every three millionths of a second. The occasion for this demonstration was a technical sales representative seminar held annually by Edgerton, Germeshausen and Grier, Inc., Boston scientific research and development firm.

Clarence L. A. Wynd has been nominated for the office of president of the Alumni Association of M.I.T. Eastman Kodak Company recently announced his appointment as general manager of Kodak Park Works in Rochester, N.Y., the largest manufacturing unit of the company. Clarence joined Kodak in 1927 as a chemical engineer in the roll coating department, where film base is manufactured. After serving as a supervisor in the manufacturing experiments department for six years, he was named assistant superintendent of the department in 1934. In 1944 he was appointed assistant general superintendent of film manufacturing, becoming assistant to the Kodak Park general manager in 1947. Six years later he was named assistant general manager there, and in 1956 was elected as a Kodak vice-president. In addition to his responsibilities at Kodak Park, he is also vice-president and a director of Eastman Gelatine Corporation. Clarence served as president of the Rochester Chamber of Commerce in 1957-1958, and is now a life trustee of the organization. He is an honorary secretary of M.I.T. and an alumni term member of

the M.I.T. Corporation. During World War II, he served as a consultant to the Office of Production Research and Development of the War Production Board.

Frank C. Staples, President of American Molasses Company, New York City, has been chosen a judge to serve for a three-year term, to select the winner of the Dyer Memorial Award for the Sugar Man of the Year. The judges are chosen by B. W. Dyer and Company, sugar economists and brokers, New York City, from various segments of the sugar industry. The award is to bring recognition to some individual who makes a significant or meritorious contribution to the sugar industry of the United States.

In connection with the report on the Regional Personal Solicitation Program for the 1960 M.I.T. Alumni Fund, we noted the names of several of our members who are serving as chairmen of their respective regions: P. E. Parker—Sacramento, Calif., J. J. Dunn—Bangor, Me., G. A. Hall—Columbus, Ohio, and A. W. Schuster—El Paso, Texas.

We have just been advised of the death of Lloyd S. Corbett, of East Longmeadow, Mass., on September 15, 1956.—J. S. HARRIS, *Secretary*, Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

'28

In the December notes we mentioned that Gus Solomons was running for election to the Cambridge School Committee. We are pleased to note that Gus won his post in that city-wide election. He had the backing of the Cambridge Civic Association. Our sincere congratulations, Gus, late though they may be.

At the National Conference on Air Pollution held in New Orleans March 22-24, your assistant secretary met our good classmate, Dick Hoak. He was moderator for one of the technical sessions. Dick is senior fellow at Mellon Institute in Pittsburgh, where he directs activity in pollution control, especially with respect to ground water. We had a very pleasant '28 meeting at the hotel bar. Dick is well, still full of enthusiasm, and plans to be at the 35th in 1963.

John Campobasso was recently elected a town meeting member in Lexington, Mass., and so made the news. John is with Badger Manufacturing Company where he is sales manager in the manufacturing division. The vapor compression still for converting sea water to fresh is an important part of the company's business and John has covered the world on cruises as the units have gone on shakedown runs in submarines and minesweepers. For relaxation, John likes to garden on his one and a half-acre Lexington lot; he specializes in flowers, strawberries, and tomatoes and has about 1,000 Christmas trees in growth. Wife Elsie is associated with the College Seal and Crest Company, of Cambridge, which supplies the various M.I.T. insignia items to the M.I.T. Co-op Store. Son John, Jr., is in the fifth class at New Preparatory School in Cambridge and is planning to enter Harvard this fall to study law.—GEORGE I. CHATFIELD, *Secretary*, 11 Winfield Ave-

nue, Harrison, N.Y.; WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, Cambridge, Mass.

'29

Mac Hubbard and his Hermes Electronic Company in Cambridge are and have been involved in an \$80,000,000 project with NATO concerning the design and supervision of a microwave system of communication with stations dotted from the North Cape to eastern Turkey at the Soviet border. This came about several years ago when NATO realized that it could not make effective use of its 14-nation forces while limited to land telephones as the only means of communication. Mac was a natural for this "Project Ace High." From 'way back Mac has been a "ham" radio operator and became interested in crystal behavior early in the game. The continuation of this interest has resulted in Hermes becoming one of the largest producers of crystal filters in the country. After graduation Mac was associated with the Bell System and during the war was loaned to M.I.T. where he was assistant director of the Nuclear Laboratory and later took part in microwave radar research as Director of the Lincoln Laboratory. He formed Hermes in 1955. It sounds like a colossal task, Mac. Our congratulations!

We learned that Walter Burke has been elected vice-president of McDonnell Aircraft Corporation of St. Louis, Mo. Walt is the factory manager of the company. . . . George Cudhea has been appointed manager of marketing of General Electric's rocket engine section. Prior to joining G.E., George served for two years as assistant to the president of Kaiser Industries, New York City, where he had previously held several important posts. Previous to 1950 George was assistant to the president of Chase Aircraft Company in Trenton, N.J. George lives in Cincinnati, Ohio. . . . A press release advises that H. Dayton Wilde has been appointed to the newly created post of university relations counselor for Humble Oil Company, Houston. In his new post Dayton will be responsible for fostering good relations with colleges and universities from which Humble recruits many of its new employees. Dayton lives in Houston.

A notice from The Review office has just come in advising of the passing of Stanford Sword, in Springfield, Pa., on October 16, 1959. Stan was a member of Course I.—FISHER HILLS, *Assistant Secretary*, 62 Whittemore Avenue, Cambridge, Mass.

'31

A news release from the Standard Oil Company of New Jersey tells that Emilio Collado, treasurer of the company, has been designated as a candidate for election to the Board of Directors at Jersey Standard's annual meeting on May 25. Emilio has been treasurer of Standard since 1954, having joined the company in 1947 after 13 years with the State De-

partment, the Treasury, and the Federal Reserve Bank of New York. He is a trustee of the Committee for Economic Development and chairman of the Council of the Harvard Foundation for Advanced Study and Research. . . . Myron T. Smith, sales manager of the General Radio Company, has been appointed its director of sales, according to a clipping forwarded by Carole A. Clarke, Secretary of the Class of '21. Myron went with General Radio after graduation as a development engineer, changing later to sales engineering. After opening and managing the New York and Los Angeles district offices, he was appointed sales engineering manager in 1944 and sales manager in 1948.

Address changes received since last month are John A. Coleman, 51 Munn Avenue, Bogota, N.J.; Thomas A. Grant, P. O. Box 330, Staunton, Va.; Chik H. Lam, 414 Alexandra House, Hong Kong, and Eugene J. Lourie, 1543 Dorchester, Birmingham, Mich. . . . Don't forget Alumni Day! —EDWIN S. WORDEN, *Secretary*, 6 Murvon Court, Westport, Conn.; GORDON A. SPEEDIE, *Assistant Secretary*, 90 Falmouth Road, Arlington 74, Mass.

'32

Word has just reached the Alumni Office of the recent death of Colonel William J. Crowe, II, who was residing in Longmeadow, Mass. The sympathies of our class are extended to his family.

Clarence M. Chase, Jr., VIII, has been promoted to assistant to the treasurer of Union Carbide Corporation. Previously he had been control manager of the Union Carbide Plastics Company. This sounds like a wonderful promotion to the parent company. All of us wish you the best of luck, Chippy! . . . John J. Loustaunau, VI-A, was at M.I.T. recently recruiting personnel for Bechtel Associates. John is assistant chief engineer and has been working on the design of petroleum refineries and some foreign chemical plants. His family of seven children is prospering in the New York area. He must have the biggest family of our class. . . . Oliver H. Scharnberg, XV, has been made a director of the Craftsman Life Insurance Company. For some time now he has been senior consultant with the Boston investment counsel firm of Scudder, Stevens and Clark.

We must be getting old because I am beginning to hear reports of grandfathers in our class. Hi Clements, IX-A, reports that his daughter, Mrs. Henry A. Metcalf, made him a grandfather for the first time last January. The three generations all live in Rochester, N.Y. . . . Frank R. Cook, XVI, who founded Colorado's first aviation-electronics firm in Denver five years ago, has resigned from the presidency of the Frank R. Cook Company and liquidated his interest in the company. The company had been acquired a little over a year ago by the Telecomputing Corporation of California. Frank has been instrumental in developing the silver-zinc batteries which are used to provide electrical energy for operating the guidance and hydraulic systems, as well as

the electronic instruments, in the largest U.S. missiles. He has had an interesting career since leaving M.I.T. He graduated from the Air Force Flying School and during the war years was assigned to Wright Field on the supervision of production and development for some of the bombers for the Air Force. At the close of the war, he was made head of the research division of the U.S. Air Force. Following a period with the Minneapolis Honeywell Company, where he was the director of the aeronautical engineering department, he founded his own firm. He plans to continue his career in the development of new aeronautical and electronics organizations.

Bob Semple, X, will be in Boston shortly after this column was written to call a meeting of some of the class officers, both past and present, to discuss plans for the 30th reunion. This is not far off, so if you have any ideas or suggestions, please send them to Bob or me. . . . Rolf Morral, XIV, has already suggested that we carry out our plans which were created during one of the jovial moments in the Baker House at our 25th. Rolf and John Serrallach, XV, want us to have the reunion in their native city of Barcelona in 1962. They have some low cost estimates for contract flights and are all set for us to go. Surely would be a novel reunion! — ROLF ELIASSEN, *Secretary*, Room 1-138, M.I.T., Cambridge, Mass.

'34

If we can hold out for two more issues perhaps the Class of 1934 will have established some sort of record for longevity in the class notes section.

Thanks to the alertness of The Review's editorial staff office, we have learned that Wilbert P. Frantz, engineering department head for radio navigation products in the Air Armament Division (Sperry Gyroscope), has filed a patent for a positional control system for photoscanner (No. 2,892,948) issued June 30, 1959. The patent concerns a photoscanning system for scanning lines on a chart and for automatically positioning the photoscanner with respect to the chart by comparing information derived while scanning with supplied positional data. This all sort of looks more complicated to one of your secretaries than Course 8:01 was as I remember it.

Also, we have just heard that William G. Ball, Jr., who was a resident of Belmont for over 20 years, has been appointed assistant director of public relations for Ethyl Corporation in New York. Bill Ball, who has been associated with Ethyl Corporation since 1937, has been a member of its public relations staff for the last two years. Previously, he served as an area representative, assistant sales promotion manager, and assistant to the sales manager. He is at present a trustee of the village of Larchmont, N.Y., where he and his family make their home. Bill is a member of the American Management Association, the Society of Automotive Engineers, the Public Relations Society of America, the American Petroleum Institute, the Chemists' Club and

the M.I.T. Club of New York. — HAROLD E. THAYER, *Secretary*, 415 West Jackson Road, Webster Groves 19, Mo.; other secretaries: JAMES P. EDER, Industrias Metalicas de Palmira, Colombia, South America; G. K. CROSBY, Longwood Road, Huntington 1, W.Va.; MALCOLM S. STEVENS, Room 1-139, M.I.T., Cambridge 39, Mass.

'37

Ed Hitchcock is staff assistant to coordinator, overseas chemical production, Union Carbide Production, Union Carbide International. Ed reports that he spends about a third of his time out of the country with world-wide responsibility. . . . Paul Vogel is Controller with the Underwood Corporation, which recently joined with Olivetti. . . . Bert Bennison is assistant director of research, Ortho Research Foundation, Raritan, N.J. . . . Ray McFee is director of research for Avionics, division of Aerojet General Corporation. Ray reports that he has recently seen Jim McLean and Duane Wood in California.

Bob Benson has been elected a full vice-president of the Equitable Life Assurance Society. Bob is in the securities investment field at Equitable's home office in New York and was a second vice-president. A native of Brooklyn, Bob studied power plant engineering at M.I.T. and was a student engineer for two years with Consolidated Edison Company in New York. He then studied public utility management at Harvard and, after graduating, became an engineer in the Long Island Lighting Company's system planning department. He entered military service in 1942, was assigned to the Office of the Commanding General, Army Service Forces and, at war's end, held the rank of major. Bob, in 1946, joined Equitable as an analyst in the industrial securities division of the securities investment department and six months later was transferred to the public securities division. In 1949 the company named him public utility engineer and two years later promoted him to assistant manager of the department. He became manager in 1953 and a second vice-president in 1956. Bob is a member of the American Gas Association, a trustee and member of the finance committees of the national YWCA's retirement fund and its savings and security plan, and secretary, treasurer and a director of Brooklyn Garden Apartments, Inc.

Through the efforts of Bill Bergen, President of the Martin Company, Johns Hopkins University will soon be able to offer a \$5,000-a-year fellowship to a promising engineering or physical-science student in any one of the 61 countries that participated in the International Geophysical Year. The fellowship, to be named after Project Vanguard, was created as a result of talks Bill had with scientific and educational leaders throughout the nation.

June is reunion month and the latest results show that the following classmates have added their names to the list of those who plan to attend our 25th reunion: Ray, McFee, Bert Bennison, Paul Vogel, Ed Hitchcock, John Nugent, Jerv

Webb, Henry Rugo, Joe Heal, Huck Comley, George Ewald, Ed Herbig, and Bob Rudy. Let your secretary know your intentions and we hope we will see many of you at Alumni Day 1960. — ROBERT H. THORSON, *Secretary*, 506 Riverside Avenue, Medford, Mass.; CURTIS POWELL, *Assistant Secretary*, Room 5-323, M.I.T., Cambridge, Mass.; JEROME E. SALNY, *Assistant Secretary*, Egbert Hill, Morristown, N.J.

'39

From an IBM news release come some interesting facts about Dr. Lloyd P. Hunter, formerly resident manager of the Poughkeepsie, N.Y., Research Laboratory. He has joined the corporate staff of IBM on special assignment. Here are some digested details of Lloyd's career to date: B.A. in physics, College of Wooster; B.S. in physics, M.I.T.; M.S. and Sc.D. in physics from Carnegie Tech. Taught physics at Carnegie and solid state physics at University of Pittsburgh. 1942: Joined Westinghouse for work in microwave magnetron development. Later, at University of California, calutron development. 1946: Oak Ridge, radiation effects in solids. 1948: Rejoined Westinghouse as manager of solid state electronic section. 1951: IBM, in charge of transistor research. 1958: Appointed resident manager of the Poughkeepsie Lab. That's surely a long way up in physics from those of us who struggled just to keep up!

A note from Standard Oil of Indiana indicates that Dr. James E. Seebold is participating in a consolidation of all research on petroleum products and processes into a single research and development department. At the new organization—in the Chicago general offices—Dr. Seebold will be in charge of co-ordinating process and engineering development.

Dick Leghorn breaks into the news again as president of ITEK with a trip starting March 10 to Russia as a guest of the Soviet Academy of Sciences. Dick was to visit the All-Union Institute of Scientific and Technical Information, "VINITI," to keep up to date on their systems of Information Technology. (Dick has been mentioned at least twice recently in these notes; all this ought to prompt him to send in a personal note for next fall's notes.)

The February 28 issue of the New York *Herald Tribune* carried a fine article about a telephone interview with Professor Paul E. Sanderoff, of M.I.T.'s Department of Aeronautics and Astronautics. The newspaper article was devoted to the educational training of space engineers, and much of the material was gathered from the interview with Paul. For example: "An effort must be made to interest more high school graduates in engineering careers and to clear up the apparent misconception among many youngsters that scientists and not engineers will be the 'glamour boys' of the space age." A final problem, he said, lies in the severe shortage of astronomers who not only are familiar with the classical theories of celestial mechanics but are capable of ap-

plying them through use of the newer techniques, including digital computers.

So far, Manning Morrill, vice-president of W. R. Grace's Cryovac Division, Cambridge, is the first to take advantage of the blank page put at the end of these notes as a reminder to send material along to the appropriate secretary. Manny mentioned Dick Leghorn's trip, said he recently saw Harold Pope—now living outside Nashua, N.H.—and gave word that Brownie Parker of Dewey and Almy fame has taken on a sideline: With several others he is in the tree-growing business in New Hampshire. If lucky, he expects profitability around 1970.

Note: A plea for more responsive and alert classmates like Manning; get in those notes, please. Even if you don't like to talk about yourself, tell us about other '39ers.

Wilson B. Keene, Box 217, Stockton Road, Joppa, Md., is one of the few '39ers who has taken the pains to write, other than Manny, Doc Wingard, and several Christmas card correspondents. Wilson's letter was a tragic one, but brave: At Christmastime, 1958, he suffered a stroke, ending up with substantial paralysis of the left side. He has been back at work for over a year now, starting with two hours a day and now attaining the total of seven hours a day. He says: "I have the best job in the country. I have about 20 men working on the engineering of chemical and pyrotechnic munitions and equipment to fill the same with various nasty messes. . . . You can get along pretty well even as a hemiplegic, which apparently means the line of demarcation is horizontal, not vertical as in paraplegic. With a good wife (I still can't drive, although I shall learn again this spring), a good secretary (but they will get engaged) and some working friends, I can do almost anything—except write decent longhand. . . . I don't see many '39ers, even though the Chemical Corps is full of M.I.T. men; they're mostly on the laboratory side. . . . And I'll be at the 25th reunion, even though I'll have to take a ground floor room, for I can't climb stairs." Our best wishes, Wilson B., and sincere congratulations for your remarkable determination not to let bad luck keep a good man down!

Readership survey item: Look through the May 28 issue of *Business Week*, and drop me a line if you see anything special.—OSWALD STEWART, *Secretary*, 31 Birch Road, Darien, Conn.

'40

A final reminder that our 20th reunion is at Chatham Bars in Chatham, Mass., on June 11 and 12. I hope to see all of you there.

Scott Walker has been named dean of the College of Petroleum Sciences and Engineering at the University of Tulsa in Tulsa, Okla. . . . Larry Welch has been appointed manager of procurement for Pitt-Consol Chemical Company. Previously, he was manager of Pitt-Consol phenolic molding powder operation. . . . As usual, the Class of '40 has a firm hand on the till. George Blair has been elected

manager of the Huntington Avenue Office, First National Bank of Boston. Previously, he was an assistant branch manager with the bank.

Vincent Kling has been retained by the Tennessee Valley Authority to assist in the design of the Paradise Steam Plant in western Kentucky. The plant will have the largest turbogenerator that has ever been built. This is the first time that the TVA has employed an architectural consultant.—ALVIN GUTTAG, *Secretary*, Cushman, Darby & Cushman, American Security Building, Washington 5, D.C.; SAMUEL A. GOLDBLITH, *Assistant Secretary*, Room 16-325, M.I.T., Cambridge, Mass.; MARSHALL D. McCUEN, *Assistant Secretary*, 4414 Broadway, Indianapolis 5, Ind.

'41

Art Spear has been promoted to general manager of the Revlon plants in Edison and Irvington, N. J.; he has held positions in the fields of cosmetics, jewelry, and clothing since graduation. . . . Frank Wyle, President of Wyle Laboratories of El Segundo, Calif., has announced the acquisition of Parameters, Inc., a testing firm at New Hyde Park, L. I., N. Y. The concern will be named Wyle-Parameters, Inc., and will concentrate on testing electronic, hydraulic, and pneumatic components for missiles and aircraft. . . . Mal Abzug tells us that his correct title is supervisor of aerodynamics, stability, and control, at Douglas Aircraft in El Segundo.

Paul Cushman was awarded a patent on an improved fluid magnetic clutch. Paul has been with General Electric since 1941, and has spent much of his time on missile guidance and flight control systems, first in Schenectady, N. Y., and presently in Pittsfield, Mass. He has taught courses in servomechanisms at M.I.T. and at Union College, and has contributed articles on feedback control to various textbooks. Presenting the patent award (a share of G.E. stock) was Bob Mayer, acting manager of advance projects and marketing for the ordnance department. . . . Dave Foss has been promoted to the position of engineering specialist in the special products section, engineering development, microwave division, of Bomac Laboratories, Inc., in Beverly, Mass. He has been with Bomac since 1952, in research and development of reference cavities, thyratrons, pencil tubes, transmitting and shutter tubes. Prior to joining Bomac, Dave was with Metal Hydrides, Inc., in Beverly, and on the Manhattan project. . . . Hank Avery has been named executive vice-president of the newly-formed Pittsburgh Chemical Company, a wholly owned subsidiary of the Pittsburgh Coke and Chemical Company. The new concern brings together the parent organization's activated carbon, protective coating, and industrial chemicals divisions, plus supporting chemical group staff departments. Plans are under way to spend around seven million dollars for plant expansion this year, in addition to the construction of a new plant near Ashland, Ky.

Dave Kenyon, of Sperry's advanced engineering department, marine division, has been issued a patent on a decoder circuit

for a teledata system. . . . Major General Leighton Davis, now assistant deputy chief of missile and rocket development, is shortly to become commander of the Cape Canaveral test center. . . . The regional personal solicitation program of the Alumni Fund is being carried out by many hard-working Alumni, including the following '41 men: Norton Polivnick, Denver; Joe Myers, Hinsdale, Ill.; Leon Labombard, Nashua, N. H.; Fred Davies, Princeton, N. J.; Joe Bergantz, Buffalo, N. Y.; Bill Butt, Dayton, Ohio; Hank Avery, Mt. Lebanon, Pa.; and Bob Blake, Falls Church, Va.

The spring get-together of the Boston area '41ers was held at the University Club, April 8, and was thoroughly enjoyed by all present. Meanwhile, keep in mind June 9 through 11, 1961, for the 20th reunion, at the Bald Peak Colony Club, Lake Winnepesaukee, N. H.—IVOR W. COLLINS, *Secretary*, 9 Sunnyside Drive, Dalton, Mass.; HENRY AVERY, *Assistant Secretary*, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

'42

Joseph Altman is already known throughout the Eastman Kodak Company and most of the photographic industry for his work on image structure, called resolving power in the olden days but now concerned with sharpness, acutance, graininess, granularity, and micro-densitometry. Boston, the second largest photographic center in the world, recently had the pleasure of hearing Joe talk on his latest work in "Effect of Developer Composition on the Microstructure of Photographic Images." The host organization was the Society of Photographic Scientists and Engineers. Joe is a research associate of the Kodak laboratories and a member of the editorial review board of the journal, *Photographic Science and Engineering*.

Willis H. Yocom has been appointed manager, wave tube development of Varian Associates in Palo Alto, Calif. After receiving his B.S. with us, he took an M.S. in electrical engineering at Stevens Institute of Technology. From 1942 to 1956 Willis was with the Bell Telephone Laboratories, and since that time with Varian. He holds five patents in the microwave tube field including the basic patents on slalom focusing.

The *General Motors Engineering Journal* reports that Lothrop M. Forbush, engineer in charge of the vehicle development group, has been granted a patent for a vehicle-wheel fastening device. . . . Robert R. Imsande has recently been transferred by General Electric to a new Lexan polycarbonate plant under construction in Mount Vernon, Ind. He joined G.E. in Pittsfield, Mass., in 1956, and before that had been with the Flintkote Company. While in Pittsfield he was a director of the Boy Scouts Council and active in the Stanley Club.

Clarence J. Grogan, a senior meteorologist at the Weather Bureau's New England Forecasting Center, was the guest speaker at a Salem, Mass., Lions Club dinner. He noted that "although no one

can do anything about the weather, the forecaster is blamed if Mother Nature upsets his predictions." Mr. Grogan's office is at the Logan Airport in Boston. He described the various activities of his office and, in particular, the added observing and forecasting necessary for planning commercial jet flights—wind speeds and directions are taken up to 70,000 feet so that added payload (with tail winds) or added fuel (with head winds) can be planned precisely. The problem is serious in transoceanic flights. Clarence was previously with the Weather Bureau in Fairbanks, Alaska.

Maynard S. Renner, of the Dewey and Almy research laboratories, presented a technical paper at the 45th national TAPPI meeting. The subject was "Some Underlying Considerations in Estimating Basis Weight Variations." In addition to serving as chairman of the TAPPI statistics committee, Maynard is a member of the American Chemical Society, the American Society for Quality Control, the American Statistical Association, the Society of Rheology, and the American Association for the Advancement of Science.

Harvey Kram writes that a pleasant afternoon's horseback ride over one of the few remaining Long Island trails ended with a visit to Dorothy and Floyd Lyon. They are fine, and Harvey was pleased to be able to relax with them in his new found leisure. He has just returned to Leviton Manufacturing Company as assistant vice-president. Before returning to the old stand, he and Elly vacationed at the Dorado Beach Hotel in Puerto Rico and "strongly recommend it to all golfing enthusiasts." He added that: "You (class secretary, president, et al) would have enjoyed our sail from St. Thomas to St. Joseph on a 38-foot sloop—Elly did not—as the sea was acting up that day despite the hot sun and blue sky, and blue water." The letter was written aboard an Eastern Airliner while Harvey was making the rounds of Leviton plants in Montreal, Providence, Brooklyn and on the West Coast. "From lipsticks (Revlon) to switches in one easy step."

Since the April class notes, I have assembled some information on the Belmont public schools from the annual report of Dr. Charles R. Thibadeau, Superintendent of Schools, as follows: "To supplement the daily teacher-prepared work, we have again participated in educational television. The material consists of work in the following areas: Grade 2, Music; Grade 3, Literature; Grade 4, Conversational French; Grade 5, Natural Science; and Grade 6, Physical Science. The children of the fourth grade are enthusiastic about their 'Parlons Francais' telecast and are learning elementary conversation, simple counting, rote songs, etc. At the present time, they are in the process of planning and preparing a skit to be presented in French to the children of the school in an assembly.

"For the second year the P.T.A. is sponsoring French classes for children in grades one through six, except for fourth grade pupils who are participating in the TV French program. These classes meet every afternoon after school with a total of 10 classes per week (in the one ele-

mentary school running this program). We are most fortunate to have an experienced language teacher who is one of the field representatives for the TV French program for elementary schools as the instructor of these after-school classes.

"Our junior high school is one of the schools in the Boston College Mathematical Program. Our pupils have displayed keen interest and success in this course. I am pleased to report that five mathematics teachers are taking the in-service course at Boston College under the direction of the author of texts now being used. With present emphasis on higher mathematics, an early introduction to abstract thinking at an elementary level has been attempted. The first treatment presents some of the structure of symbolic logic useful in exposition of mathematics and considers the application of logic in mathematics through completely new units in geometry in Grades 7 and 8 and the writing of problems in algebraic form.

"Perhaps the chief development in the English field is in the continuous search for more effective ways of studying grammar and in teaching composition. All signs point to heavier emphasis on composition; more time for practice in the skills and the art of clear, concise, well-organized writing is coming. A new unit on composition, that integrates vocabulary building, usage, functional grammar, rhetoric, and so on, represents a direct approach toward improving writing a composition. Essay questions are now included in all tests.

"For seven years Belmont High School has been affiliated with either the American Field Service or the International Foreign Student Exchange Program. Because of the increased cost and other circumstances, it was decided to make direct contact with a secondary school in Europe on a school-to-school basis. This year we have a young lady as a member of the senior class from the Albert-Schweitzer School in Absfeld, Germany. A member of the present junior class is completing his school year at the Albert-Schweitzer School, and he will re-enter Belmont High School as a member of the senior class in September 1960.

"Again this year, arrangements were made with the Telephone Company to install an Executone device in the home of an invalidated full-time home instruction student, and speakers were installed in the classrooms in the high school where she would normally be expected to attend. This device enables the student to participate in class discussions and is a direct two-way communication system with the classroom."

Dr. Thibadeau also wrote: "There is no doubt in my mind that if public education, both in the present and in the future, is going to perform its proper function, there must be a thorough overhaul of the national, state, and local tax systems. This statement is based on the firm conviction that the local property tax, even in Belmont, cannot continue to support adequately the total cost of the educational program. The fact that we are in a better position to do so than some communities does not negate this contention.

"It might be said that Belmont can, through desire and additional effort, provide all the money necessary to support an adequate and desirable educational program. I could accept such a statement if we could be sure that there was to be no out- and in-migration. If no shifts in population occurred and if we were concerned only with our present group of citizens and their offspring, this might be so. This is not our way of life, however. People are moving out, and people are moving in. Those who are moving in are really our serious concern. If they come from communities which have equal or even superior educational opportunities, there is no problem. Our difficulties are encountered when people move in from sections of our country which support educational systems inferior to our own.

"The implication is quite clear, and it provides the basic reason why we in the more fortunate localities should be seriously concerned with the problem of raising the whole national level of education to an acceptable minimum. Certain sections of our country cannot at the local level provide the quality of education which is good for the country as a whole. That is why I contend that the basis of support must be expanded.

"Those who profit from the services of governmental enterprise should share in its costs. Certainly if the local community provides a rich and rewarding program of public educational experiences for its youth, it reaps the benefits. At the same time, however, the state and the nation will also be the recipients of these same benefits. Since they are to profit, it is my contention that the three levels should share in the costs. And if we as a nation are to insure that an accepted level of minimums is to be established, we should insist that the three levels of government share in the support program.

"Some might insist on raising the question of control. It seems to me that this is not an issue. We are the people and we can plan for and place the control at the level which we choose. The state, which by statute can exercise the control, has decided through the voice of its people to place it at the local level. If the federal government should become a contributing partner, the same voice can insure that control shall continue to be vested with local authorities."

The parents of Belmont are proud of the work of our schools, and we recognize that the achievements were brought about by hard work on the part of the teachers and the school administration. The policies were evolved in the school committee and were due in large part to the imaginative and energetic work of two of the committee members. They and we realize that a lot more has yet to be done to implement fully the programs outlined above and that major upward revisions are necessary in the teacher salary structure. There will, unfortunately, be opposition to further increases in the tax rate, as may be necessary for meeting the salary requirements. We are prepared to lend vigorous and persuasive support to this important program. I would appreciate suggestions from class members who have been successful in instituting

more adequate salary programs in their schools.

The assistant secretaries, Ed Edmunds, J. J. Quinn and Bob Keating, join me in sending best wishes for good report cards for your children and delightful plans for summer vacations.—LOU ROSENBLUM, *Secretary, Tech/ops, Burlington, Mass.*

2-'44

Last month your secretary skipped, unfortunately, due to a sudden overload in work. Will try to bring you up to date this month.

Got a note from Smyth and Murphy Associates advising that Roland Benjamin had just joined them as a vice-president. They are in the personnel administration field, and located in New York City. . . . Ran into Burt Bromfield the other day, and he gave me a rundown on a number of fellows whom he had seen over the last few months. He, by the way, is busy building ferry boats by the banks of the Charles in East Boston.

Sam Parkinson, who is now with the Coast and Geodetic Survey, trained for the job by spending some time in Alaska prospecting for gold. It appears that this is a summer job in Alaska, so Sam took a job as a U. S. marshall in the winter to keep going. . . . Burt also advises that he ran into Mario Banus who is with Metal Hydrides here in Boston. I shall try to get more of a rundown for the next notes.

Warren Tagen is located here with Boston Edison, in the data processing department. I understand that he is working on aspects of the automation of power generating plants. . . . Burt also reports that he ran into Martin Hird in New York City, and that Martin is in the manufacture of plastic-covered furniture. Unfortunately, Burt could not recall the trade name of the organization, so I can't give a commercial here. As a proposition, Martin, if you'll drop me a note with your company's name, I shall be happy to pass it along. Of course, as part of the bargain, some information on yourself, and other classmates that you run into will be required! . . . One last report is that Hall Boericke is with the Bureau of Ships down in Washington.

Since summer is the usual vacation period, your secretary wants to wish you all the best in vacations—and when done, do drop me a note.—PAUL M. HEILMAN, *Assistant Secretary, 131 Lindbergh Avenue, Needham, Mass.*

'45

Frank Thompson, manager of the Snow Inn, indicates that he has room for those last-minute reservations. Send a wire or for that matter, just arrive! Your fellow classmates await your presence; our 15th reunion will not be complete without you. Should you be unable to attend due to illness and/or distance—no other excuses accepted—send a wire indicating that you are with us in spirit.

All wires, letters, and what-have-you will be reviewed and enjoyed by all.

Your reunion committee has completed its advance planning and negotiations; let us all hope the weatherman co-operates in making June 10-12 a warm, pleasant weekend. In behalf of the class prexy, Dave Trageser, and myself, we would like to thank the 15th reunion committee for their efforts these past several months. The committee chairman has been Jerry Quinnan, while old money bags has been our able class agent, Bill McKay. Other actives in the Boston area have been Bill Meade, Dave Flood, Dick Luce, Bob Maglathlin, George McKewen, Tom McNamara, Bill Shuman and Chick Street. I want to add my particular thanks to those able cohorts around the country who made phone calls and other contacts such as Max Ruehrmund, Tom Hewson, Ed Stoltz, Nick Mumford and Bob Hildebrand. It may be true that the primary responsibility for a successful 15th reunion is vested with a few, but it is the work of many that makes such a reunion a success. Again our thanks to all—not only the workers but also the attendees!

As of April 3, Bill McKay had received firm reservations after our second mailing from some 27 couples. In this group were several we had not heard from previously such as J. J. and Edie Strnad, Frank and Tillie Gallagher, Tom and Alice Markey, Bill and Dolores Beam. Thanks to Nick Mumford, I received a call from Walt O'Connell in Trenton today asking particulars on the reunion, and last week John Reid called wanting details. Come on and join the Snow Inn band wagon!

It is rather interesting to follow up on lost souls such as Okie O'Connell. For some reason or other our early December mailing to Okie was returned without a forwarding address. Bill McKay talked to me about it; the last contact I had had with Walt was about five years ago when he worked in New York. In mid-January Dave Trageser forwarded Walt's name to Don Severance's office together with other lost souls. In the meantime, Nick Mumford called me in New York from Idlewild Airport one day indicating he had seen O'Connell at the Dallas airport; Nick did not have an address although he did report that Okie lived in New Jersey along with six million other people. In some way or form the Alumni Office finally reached the O'Connells through the Post Office Department in Trenton, N.J. Ever-efficient Mr. O'Connell carried the P.O. form around in his pocket for two weeks before he mailed it from Minneapolis in early March. I received the new address from the Institute March 20. In the meantime, Okie bumped into Nick Mumford again at Love Field, Dallas, and called Mumford not Nick but Chick Street, but upon recovery of his wits Okie did get my phone number. The moral of the story—if there is one—would be that, should you be alive, big brother will find you sooner or later.

To those of you who returned our original questionnaire, again our thanks; to those of you who have forgotten or misplaced the data sheet, all we want to know is a little about your whereabouts

and whatabouts. It is you and your family that make class news. Why not plan to start the November issue of *The Review* with a bang? Send us a card or a letter when you have a moment.

Your fellow classmates want to wish you and your family a most pleasant summer.—C. H. SPRINGER, *Secretary, Firemen's Mutual Insurance Company, 420 Lexington Avenue, New York 17, N.Y.*

'46

With reference to John Taylor's suggestion that we explore the possibilities of holding our 15th reunion in Bermuda, I have had only two communications on the subject but both parties were interested. Charlotte and Bill Schield write to say that the idea sounds good, but be sure to give enough time for people to arrange for having their children cared for. This must be done far ahead, Bill says, so let us know. John Gunnarson says the idea sounds very interesting if the cost is not outlandish. He goes on to say that he thinks some people might want to spend more than just a weekend, and this might create a problem in chartering a flight for the group. If anyone else has any comments to make, it is not too late to send them in. The reunion chairman has not been selected as of the writing of this column so you had best address your comments to me.

We recently received from the M.I.T. Alumni Fund a list of those graduates who are Regional Personal Solicitation Program Chairmen. Active from our class are the following individuals: Angus MacDonald, Westport, Conn.; Rouholah Zargapur, Oak Park, Ill.; Philip Caron, Des Moines, Iowa; Richard Steuer, Hicksville-Levittown, N. Y.; Herb Hansell, E. Cleveland, Ohio, and William Humphreys, North Hills, Pa.

Noel N. Coe is a group leader in the pulp and paper laboratory of Dorr-Oliver, Inc., Stamford, Conn. At the 45th annual meeting of the Technical Association of the Pulp and Paper Industry, held in New York in February, Noel presented a paper entitled "New Process for Hardwood Pulp (The Hifiber Process)." Noel presently makes his home at 13 Friendly Road, Norwalk, Conn. . . . Dave Herwitz finally saw the light and got married January 22. The bride is the former Carla Barron Cowett. Carla received her B.A. degree in 1952 from Radcliffe College and was graduated from Harvard Law School in 1955. She is currently practicing law in New York City. Dave, as you all know, after M.I.T. went up the river to Harvard Law School and stayed on to become a professor of law.

In a number of our past articles we have had the pleasure of reporting the activities of Dr. Thomas F. Malone, Director of Research for the Travellers Insurance Company in Hartford, Conn. We are now pleased to report an additional honor bestowed on Tom. He has just been elected President of the American Meteorological Society for a two-year term—1960-1961. . . . A clipping from the Gloucester, Mass., newspaper tells us of a special project Leonard Mandell undertook

recently. As one can imagine, the aroma permeating the State Fish Pier in Gloucester and its immediate surrounding territory is noticeable if not downright objectionable at times. So Len, as a special consultant, was called in by the Gloucester By-Products and Dehydrating Process Company, Inc., to sniff out the problem and recommend solutions. The article quotes Len's findings and recommended solutions. These are too long to quote here, but those interested in them or Len's services on similar problems can locate him at 44 Burlington St., Providence 6, R. I. After M.I.T., Len attended the Harvard School of Public Health, which explains his interest in these noxious matters.

Don Burke, President of Designers in Production, located at 1818 Caesar Way South, St. Petersburg, Fla., writes from frozen Florida to sunny New England, to report that the Burkes are now so firmly transplanted in Florida that a winter temperature under 70 makes them shiver. He reports that his organization got off the ground last fall and appears to be headed for continually increasing activity. As an example of his work, he enclosed a brochure for the Reef Motel in Clearwater Beach, a project on which he co-operated with John Randell MacDonald, AIA, and Dwight R. Abrams, Consultant Engineer. The Reef is an ultra-modern, four-story motel-hotel with a large convention hall, swimming pools, ocean beach frontage and private yacht basin. Don asks if there are any in our class in the Sunshine State near him. If so, he would be pleased to have them get in touch with him.

A few months ago we reported on John Pollard's statistics regarding potential freshmen and also his thoughts on obtaining statistics on individual weight changes of classmates. Antonio Nunes of Rua Paulo Cezar De Andrade, 106-Apt. 604, Rio De Janeiro, writes to inform us that he has eight potential freshmen, which is probably tops for the class. His weight has only changed 17 pounds since his senior year, so he is only in line for one silver loving cup at this time. . . . Lt. Commander W. H. Semple has just been relieved of his duties as the Navy's resident officer in charge of construction at Aerojet-General in Sacramento, Calif., and has been named assistant public works officer at Port Lautey, Morocco. While at Aerojet-General, Bill was the responsible officer in charge of \$30 million worth of construction, including roads, utilities, buildings, and instrumentation systems required for the development, testing, and production of missile propulsion systems.

That winds it up for this month. We have one more issue before the summer vacation. Please sit down and write me a letter right now so that we may kick off the fall with a newsy column.—JOHN A. MAYNARD, *Secretary*, 13 Cabot Street, Winchester, Mass.

Fram Corporation as a textile physicist in the research department. Last December he was promoted to the position of supervisor of tests and evaluation, in charge of all laboratory facilities. Martin and wife Gloria are living in their new home at 16 Greenwood Avenue, Barrington, R. I. They are the proud parents of a boy, now in kindergarten, and a two-year-old daughter. Martin reported that George Fountas is the chief chemist at Chemical Products, a company located about a mile from the Fram Corporation laboratory.

Frank McGowan's note at Christmas time was the first news I'd had that he and Betty now have a son, Mark. They have two daughters, too, Sheryl and Robin. . . . You may have noticed the following items in the "Individuals Noteworthy" section of the April Review: David W. Brown is manager of European operations, Blackhawk, S.A.; George F. Clifford is the manager of the Spinco division of Beckman Instruments, Inc., Palo Alto, Calif.; Sidney Lees is the president and technical director of Instrument Research, Inc., Washington, D.C.; Lt. Colonel Nils M. Bengtson received the Commendation Ribbon, U.S. Army.

Class president Bob Bliss has been named manager of United Shoe Machinery Corporation's automatic fastening tool department in its industrial sales division. . . . A recent article in the *Haverhill Gazette* reported that William B. S. Leong has been appointed planning director by the Haverhill city manager. . . . From the Lawrence, Mass., *Morning Eagle-Tribune* we learn that "Dr. Elias J. Corey . . . professor of chemistry at Harvard University, has been selected as recipient of the American Chemical Society Award in pure chemistry for 1960. . . . Professor Corey's research studies have led to many new discoveries in the chemistry of natural products from living systems, in theoretical organic chemistry, and in the field of stereochemistry, which deals with the detailed three-dimensional architecture of complex molecules. . . . In addition to his academic duties, he serves as scientific consultant to the Union Carbide company, and to the Charles Pfizer Company of New York."

Dr. Erling Grovenstein, professor of chemistry at Georgia Tech, is the author of an article in the February *Georgia Tech Alumnus* entitled, "The Calculated Risk," in which he discusses the many important factors which must be considered in selecting basic scientific research problems beyond the question of the mere utility of the results of such studies. . . . From the *Recorder-Gazette*, Greenfield, Mass.: "Dr. Richard H. Jones . . . has been appointed a research associate in the research and development division of the Du Pont polychemicals department at the experimental station in Wilmington, Del. The title of research associate is given to scientists in the polychemicals department who have demonstrated extraordinary ability to originate and carry out fundamental or applied research programs closely related to the department's chosen field of polymer chemistry."

I didn't see Dick Harris on the slopes this winter, as he promised I would sometime last year. Too late now, since the season's about over, in spite of the near-

truth uttered by some sage of the past to the effect that Maine has only two seasons: winter and the Fourth of July.—ROBERT R. MOTT, *Assistant Secretary*, Box 113, Hebron, Maine; RICHARD H. HARRIS, *Secretary*, 26 South Street, Grafton, Mass.; *Assistant Secretaries*: HARRY G. JONES, 94 Oregon Avenue, Bronxville 8, N. Y.; HERBERT KINDLER, 128 Elatan Drive, Pittsburgh 16, Pa.

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John J. Glover (M.S., Chemical Engineering Practice, 1949) has been elected chairman for 1960 of the American Chemical Society's division of chemical marketing and economics. He is manager of the commercial development division of the Jefferson Chemical Company, Inc., Houston, Texas. . . . Dewey J. Sandell (Ph.D. 1949) has been appointed director of development for the research and development division of Carrier Corporation. He will administer the expanding corporate-wide, long-range development program. He has been with Carrier since 1954. . . . William M. C. Lam (B.S. 1949) announces a consulting service on the "co-ordination of lighting and architecture." He is president of Lam, Inc.

Robert T. Craig (B.S., Course VI, 1949) has been promoted to senior project engineer in the new devices laboratories of the Tapco group, Thompson Ramo Wooldridge, Inc. He is in charge of a group conducting applied research on ion and plasma rockets and magnetohydrodynamic power generators. Since joining TRW in 1956 Craig has been doing aircraft nuclear propulsion system control analysis, space propulsion studies and electronic rocket system analysis. . . . R. B. Newman (M.S. 1949), Vice-president, Bolt, Beranek and Newman, gave one of the four talks making up the formal program of a symposium sponsored by the Union Carbide Corporation to discuss the ceiling system of its building at 270 Park Avenue, New York City. The completed ceiling system will be the largest of its kind in the world and will incorporate such diverse functions as lighting, air circulation, sound barriers and partition anchorage.

In the March issue I reported on a study entitled "Journey's End." I am now informed that this study is the work of Otto E. Kirchner, Sr. (M.S. 1924) and not Otto E. Kirchner, Jr. (B.S. 1949). My mistake. . . . We continue below with the next-to-last installment of the results of last year's questionnaires. Present tense in these reports refers to spring 1959:

Walton Forstall lives at 124 Woodland Drive in Pittsburgh, Pa. He received an Sc.D. from M.I.T. as well as the professional degree of mechanical engineer from Lehigh University in 1951. He is a professor of mechanical engineering at the Carnegie Institute of Technology. Married (Jean); two boys, fifteen and eight. Owns home in suburbia. Has held one job since graduation.

Francis L. Marran, XIII, lives at 220 Bay Avenue, Patchogue, N.Y. He is self-employed (Marran's Oil Burner Service), plumbing and heating installation and service; also wholesale and retail petro-

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Many and diverse are the honors and laudable achievements we can report. Martin Billett wrote in January that since November, 1958, he has been with the

leum sales. Married (Marjorie), three boys, nine, four, two. Pets: dog and parakeet. Owns home in suburbia. Has held two jobs since graduation.

Leonard N. McKibben, II, lives at 266 Reservoir Road, Newington, Conn. Is sales engineer for the Osborn Manufacturing Company, Cleveland, Ohio, covering sales and service of foundry molding machines throughout Canada, New England, New Jersey, New York and eastern Pennsylvania. Married (Alma); three children, boy nine and two girls six and a half and five. Pet: dog. Owns home in suburbia. Has held two jobs since graduation.

Wallace R. McKinnon, XVIII, lives at 131 Woodridge Road, Wayland, Mass. Is data processing supervisor for Avco research and advanced development division, supervising group which is responsible for reduction of all field test data from missile systems research and development program. Married (Gladys); four children, two boys five and three, two girls seven and one. Owns home in suburbia. Has held five jobs since graduation.

John C. Miller, X, lives at 4 Hubbard Street, Canton, Mass. Is sales engineer for the Formica Corporation, and assistant manager of the sales office in Quincy, Mass., supervising five salesmen. Married (Mary); has a daughter, one year. Owns home in suburbia. Has held three jobs since graduation.

William C. Mitchell, I, lives at 1803 Jefferson Avenue, Toledo, Ohio. Is manager of Real Estate and Land Development Company, Bailey-Mitchell Realty, managing general real estate company, developing subdivisions, and managing a real estate investment company. Bachelor (hunting). Owns home in suburbia. Has held two jobs since graduation.

G. E. Motzenbecker, XV, lives at 230 North Michigan Avenue, Chicago 1, Ill. Is manager, electric welding sales, Chicago district of Linde Company, division of Union Carbide Corporation. Married (Lois); three children, girl eight and two boys six and two. Pet: parakeet. Owns home in suburbia. Has held one job since graduation.

Parker Painter, Jr., VI, Option 4, lives at 1850 Stonehurst Road, Winter Park, Fla. Is president of Dynatronics, Inc. Married (Marion); two children, girl seven and boy four. Owns home in suburbia. Has held three jobs since graduation.

Robert E. Pereles, IX-B, lives at 1576 East Blackthorne Place, Milwaukee 11, Wis. He is a chemist for Argonaut Mills. Married (Ann); two boys six and four. Owns home in suburbia. Has held three jobs since graduation.

Abraham A. Perez lives at 1548 Granville Avenue, Los Angeles 25, Calif. He received an M.S. from M.I.T., and an M.S.E.E. from the University of Pennsylvania in 1959. He is head of advanced systems logic research of Litton Industries, computers and controls laboratory; technical direction of studies in logical organization of advanced information handling systems and initiation of new research activities. Married (Santina); five children, four girls, eight, seven, five, one half, boy two. Rents home in suburbia. Has held five jobs since graduation.

Jan B. Peyrot, II, lives at 157 Pond Circle, Glastonbury, Conn. He is an ex-

perimental engineer for United Aircraft Corporation, Pratt and Whitney Aircraft, working on the development of control systems for gas turbine engines. Married (Carolyn); two girls three and 0.8. Pet: dog. Owns home in the country. Has held three jobs since graduation.

Howard A. Reuter, VI, lives at Lake Drive, Bayside Beach, Pasadena, Md. He is project and senior engineer for Westinghouse Electric Company, air arm division, handling design and development of radar systems for missile use. He comments that M.I.T. taught him that there was a "quality" or "approach from basic fundamentals" solution to a problem and helped him to find it. Married (Judith); children, girl aged two. Pet: dog. Owns home in the country. Has held four jobs since graduation.

Gregor F. Meyer lives at 1373 Heberton Avenue, Pittsburgh 6, Pa. He received a B.S. in Course XV, and a Bachelor of Law degree from the University of Pittsburgh in June 1952. He is an attorney and chairman of the board of East End Federal Savings and Loan Association; also part-time managing officer of savings and loan. Married (Bashie); child three and a half. Pet: dog. Owns home in suburbia. Has held one job since graduation.

Herbert L. Spivack, X, lives at 55 Palmer Street, New Bedford, Mass. He is general manager of Isochem Resins Corporation, supervising all phases of operations production, research and development, technical sales of epoxy resins and other specialized plastics for electronics applications. Married (Gloria); two children, girl five, boy three. Rents apartment in suburbia. Has held three jobs since graduation.

Charles M. Sutherland, VI, Option 3, lives at 79 Mayo Road, Wellesley, Mass. He is sales engineer for R. H. Sturdy Company, Inc., manufacturers' representative for electronic digital computer components. Married (Jeanne); two girls, three and one. Owns home in suburbia. Has held four jobs since graduation.

Rush Taggart, Jr., XV, lives at Parrish Lane, New Canaan, Conn. He is purchasing agent for Union Carbide Corporation, handling construction purchasing primarily for the Union Carbide Chemicals Company. Married (Dorothy); three children, two boys six and two, girl five. Pet: dog. Owns home in suburbia. Has held three jobs since graduation.

A. P. Van Stolk, XIV, lives at Jauastraat 8, Rotterdam, Holland. He is self-employed. Married (Elizabeth Jean); three girls eight, four, two, and boy six. Pets: dog and cat. Owns home in suburbia. Has held one job since graduation.—FRANK T. HULSWIT, *Secretary*, 14 Nadine Road, Saxonville, Mass.

Marv is the exclusive manufacturer's representative for New England for six hi-fi firms. This new venture keeps him busy but he still holds his Saturday afternoon classes at the Boston Museum of Science for junior high school youngsters interested in learning about electronics. . . . Morton Prince has been appointed vice-president and general manager of the semiconductor division of Hoffman Electronics Corporation. Morton joined Hoffman in 1956 after five years on the technical staff at Bell Labs, where he had worked on the first silicon solar energy converter. . . . Gerald Moore, now with Concord Controls, Inc., delivered a paper at the April meeting of the Institute of Radio Engineers in Boston entitled, "Digital Techniques and Digital-Analog Conversion in Directors for Numerically Controlled Machine Tools."

Our class has been fortunate in having Hank Spaulding agree to organize the plans for our 10th reunion. The tentative dates are June 10 and 11, 1961. Our fifth reunion was such a singular success that we are about to set even more records for reunion participation. In order to help get the ball rolling and to provide the class treasury with sufficient funds for normal maintenance and class elections, the class is being asked to submit its dues for the period 1956-61. At the rate of only 75 cents each year our dues come to \$3.75. Please send your dues to either of the undersigned.—RICHARD W. WILLARD, *Secretary-Treasurer*, Box 105, Littleton, Mass.; ROBERT S. GOOCH, *Assistant Secretary-Treasurer*, 407-410 Danciger Building, Fort Worth 2, Texas.

'52

Hear ye—hear ye: '52 COCKTAIL PARTY to be held at the Faculty Club on June 10, from 6 o'clock on. Usual terms, meaning bring your wife or date, dinner available at Faculty Club by contacting members present, Dutch Treat, and judging by the last two, a goodly time for all. This is turning into a real successful annual affair—don't miss it if you are in the area, or up to Tech for Alumni Day.

Your secretary has just returned from an auto trip to the far west; stayed at a guest ranch in Arizona (Wrangler's Roost, 36 miles from Phoenix in New River) where one rides amongst the cacti; then on to California for a drive down the coast from San Francisco to San Diego with all points in between, and being thus tired out, this will be a short column. Thanks again for those questionnaires, and all the letters coming in. This is one secretary *not* short on notes at present.

Saw Bill Morton in Cambridge briefly, while he was up visiting Tech. Bill is with the G. E. computer division in Phoenix (warm and sunny). . . . And keep seeing Bill Dingee in Harvard Square for short talks. Bill is getting his own medical supply equipment company rolling and we swap notes on small business. . . . Paul Seever writes in that he is with IBM in Poughkeepsie, N.Y., as a marketing services representative, involved in plan-

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Ed Hucke has been selected as the outstanding young engineer of the Detroit area by the Junior Chamber of Commerce. . . . Morley Kahn has been named sales manager by H. H. Scott, Inc., of Maynard, Mass. . . . Marv Grossman, formerly with H. H. Scott, has inaugurated M. C. Grossman Sales in Newton, Mass.

ning new computers (wonder how many of our class are in data processing and computer work?). . . . Joe Moore is in Houston, Texas, and is in consulting, partner in Bonner and Moore Engineering Association, with John Bonner '50 and Lou Karvelas. Joe writes he is active in the local M.I.T. Club of South Texas, and mentions that child number five, Jane Elizabeth, arrived last August. . . . Jack and Ginny Copenhefer are still in Louisville, Ky., where Jack is chief engineer at Famco, Inc., division of American Air Filter, Inc., making glass fibers for air filtration and for reinforced plastics. Son Gregg, aged one year, doing fine. . . . C. E. Lautzenheiser is in Lake Jackson, Texas, with Dow Chemical in Freeport, Texas, as senior maintenance engineer handling welding, metallurgical and corrosion engineering, and in charge of ultrasonic testing.

Murvale H. Moore, Jr., writes that he is in Waltham, Mass., with Dunn Engineering Associates, Inc., in Cambridge as a project engineer in charge of a radar study program for the Navy. . . . Al and Fran Kandel in East Meadow, L.I., where Al is with Arma Division, American Bosch Arma Corporation, in Garden City. Al is a project engineer, helping administer their contract for inertial guidance systems, establishing budgets and controls, negotiating with the Air Force, and in spare time helping to organize the Long Island chapter of the American Institute of Industrial Engineers. He mentioned Bill McLaughlin visiting Arma from Space Technology Labs, that Bill was married recently, and likes California. . . . Robert P. Harper is in Williamsville, N.Y., working for Cornell Aero Lab in Buffalo as a project engineer and engineering test pilot on quality flight research for airplanes and atmospheric entry vehicles utilizing variable stability airplanes. Mentions John Young is with Chance Vought in Dallas, Texas.

George Jordan (formerly George Jordan Zavalakes) writes from Palmyra, N.Y., that he is with the Kordite Corporation in Macedon, N.Y., as assistant product manager in the product management function of sales division. He and Connie have three children. Note that change of name for your address books. . . . Steve Spacil was recently appointed metallurgist to the staff of metallurgy and ceramics research at G. E. research lab in Schenectady, N.Y., where he will specialize in the chemistry of process metallurgy. . . . Bob Ehlert writes from Willowick, Ohio, that he is with Thompson Ramo Wooldridge in Euclid as an industrial engineer and that he was top scorer on the examination for licensing as a Professional Industrial Engineer in Ohio. Bob and Phyl have two daughters, Carol aged four, and Anne aged one. Mentions that Ralph Bell is also at Thompson Ramo Wooldridge. . . . Ray Jacob is in Bogota, Colombia, with Sociedad Elaboradora de Artículos de Seda (apologies if that name isn't quite right) as vice-president. That is a textile mill for your information. Ray is active in the M.I.T. Club of Bogota. . . . Jim Reese is in Dallas with Texas Instruments, Inc., as general manufacturing superintendent of the special computer devices department of the semiconductor components division.

Jim brings us up to date — Army Security Agency in Germany till '54, then M.B.A. Harvard Business '56, and then T.I. Jim is married, wife Barbara, daughter Susan one and a half. Mentions his only contact with the class is this column and Bob Briber at fund time. Wonder how many others feel this and whether we can improve communications?

It's now Professor James L. Stockard since March. Jim is still at the Institute and has moved to Brookline with Joan and son Chris. . . . Hal Pepper is with the E. and F. Construction Company in Bridgeport, Conn., as an estimator and project co-ordinator constructing schools, industrial and commercial buildings in southern Connecticut. Hal mentions that after graduation from Tech he went to the University of Michigan and received his master's in civil engineering, married, and is now raising a family in Trumbull, Conn. And that winds up the mailbag for today.

So once again, Friday June 10 is '52 day at the Faculty Club for dutch treat cocktails (and dinner if you wish). See you there. — DANA M. FERGUSON, *Secretary*, 242 Great Road, Acton, Mass.

'53

News is something I don't have but hope to get! Therefore, I'll proceed to run off at the mouth and write a second edition of "Much Ado About Nothing."

At the last meeting of the Boston Luncheon Club (that is, M.I.T. Club of . . .) saw Dick Lindstrom and Tom Faulhaber plus a bunch from the Class of '52. A couple of weeks later, our class was well represented at the meeting of the M.I.T. Alumni Council at the Faculty Club. Included were Paul Shepherd (our noble president), Frank Turcotte (our equally noble class agent), Tom Faulhaber, Norm Gardner and yours truly. Saw quite a group from the Classes of '52 and '54. The speaker was none other than Dr. James Killian '26, who discussed his recent 35-day trip around the world. It was an extremely interesting meeting.

Don't forget to mark the evening of June 10 on your calendar. Our class will be having a joint cocktail party and dinner with the Classes of '52 and '54 at the Faculty Club (Dutch treat). Should be a gala affair. Do come and join us (bring wives, girl friends, etc., of course).

Some of you may be surprised to learn that Jack Halsell (one of the "regulars" in the Deke house in his undergraduate days) is now Reverend Halsell at the South Main Baptist Church in Houston, Texas. . . . George Tso is working in Hong Kong for the Paul Construction Company. . . . Gene Romer recently was promoted to a captain (Air Force, I think), and is presently stationed in Dayton, Ohio.

Received a letter from Fred Brecher; he and Sandi (plus one-year-old Leslie) recently bought a home in Wynnewood, Pa. He reports a trip to Ohio last fall and that they spent an evening with Gil and Janie Gardner. He's keeping busy and has been doing some interesting design projects, one of which will be published in *Engineering News Record*. . . . A last minute letter

came in from Ted and Joannie Bodner, who are living in New York City while Ted completes his medical schooling. He graduates on June 8 and on July 1 will begin his internship at Grace-New Haven Community Hospital (Yale). Joannie adds: "The children (Andrew age three and Elizabeth one and a half) use up our spare time. Hopefully, we'll get a vacation in New Hampshire before Ted begins his internship." . . . No more news from where I sit. WRITE! — MARTIN WOHL, *Secretary*, Room 1-131, M.I.T., Cambridge, Mass.

'55

It seems amazing, but reunion returns are still pouring in from our first mailing, and according to Jim Eacker the response on definite reservations has been most encouraging. Though this is written in April, we predict that the Woodbound Inn will be the "Techbound Inn" on June 11-12.

It's always a bit more exciting to receive mail with interesting markings, and this month brought in two pieces. Gil and Barbara Davidson write from Paris where Gil is on a post-doctoral Fulbright. Besides the professional stimulation, the year has been highlighted by holidays in Spain and Italy. John Russell is expected to fly over in July and join them on a six-week tour of northern Europe. . . . Bart Roesler writes from the Technische Hochschule in Stuttgart, Germany, where he is on a National Science Foundation post-doctoral fellowship. He says that things are going well and wonders if Glenn Jackson is still alive — how about it Glenn?

Wayne McClung plans to take time out from his photographic store in Albany, Ga., and join us for the reunion. . . . Bill Chandler writes from Cloquet, Minn., that he is a materials handling engineer. If you people would mention the company name, we will offer a free plug. One of our classmates once wrote that he had been working in the same building as another '55er for two years, and they had never met — so how about company affiliations?

John Blake is finishing up his Ph.D. in zoology at University of North Carolina. He has three children, one boy and two girls (starting your own zoo, John?), and hopes to be up to the reunion. . . . Paul Mosher writes from Methuen, Mass., that the stork will be dropping in about reunion time, and he probably won't be able to join us. . . . Tony Diglio is a production supervisor in chemical engineering in New London, Conn. He really raves about the practical side of engineering life that he got at M.I.T. Practice School, and feels that it should be a standard requirement for all graduates. (This is an interesting point and we would like to hear more comments on this in connection with any of the engineering fields.)

Harvey Sherman hopes to be up for the reunion from Stamford, Conn., where he is working as an electrical engineer. . . . Paul Lualdi is spending a year back at M.I.T. graduate school. . . . Paul Attridge is in the insurance business in Boston.

... And Hal Stubing says that he is still the gay old "Bachelor of Buffalo." Hal is foreman of an open hearth for the Bethlehem Steel Company. . . . The winter issue of the *Boulder Confidential* tells of the thriving Brooks family. While Toby tends to Jake and Naomi, Dave is busy at the University of Colorado graduate school studying for an M.S. degree in economics. . . . In January, Ed Somody was married in the M.I.T. Chapel to Darleen Dale of Johnson, Vt. Ed is a missile engineer with the government in Las Cruces, N.M. . . . Ron Lieber was elected president of the St. Louis Young Republicans Club. He is at the Monsanto Chemical Company. . . . Lieutenant Lee Zuker writes from Dayton, Ohio, that he is attending the Armed Forces Institute of Technology, and should get an M.S. in electrical engineering shortly. . . . Dean Zeilon is with Charmin Paper Products Company as a mill superintendent in Green Bay, Wis. He is married to Mary Byrnes, and they have a son, Carl Eric. . . . Mel Weiner writes from Brookline that he is self-employed as a consultant in research and development in solid state electronics.

Hope to see you all at the reunion and Alumni Day. — MRS. J. H. VENARDE, *Secretary*, 107 Mullin Road, Wilmington, Del.; L. DENNIS SHAPIRO, *Assistant Secretary*, 15 Linnaean Street, Cambridge, Mass. ELiot 4-4901.

'56

With the fifth reunion only a year away, Bob Malster has been named chairman of the function and he is soliciting all available help from interested classmates throughout the country. Contact Bob at 59 Elsinore Street, Concord, Mass.

Not previously mentioned as receiving master's from Tech are John Ross, Larry Moss, and Gordon Black. . . . A letter from Larry Sayah in January informs that he has been a communications officer in the Air Force in Tripoli for three years. He wed Deborah Rosenberg of Hazelton, Pa., in 1957 and they became parents of a son, Jeffrey David, last December. The Sayahs returned to the states and civilian life last month but while overseas they managed to spend six weeks' vacation in Europe. . . . In a recent letter to Phil Bryden, Ron Goldner states that he is teaching at Purdue; received his third degree in electrical engineering from Tech in 1959; spent a short time at the Signal Corps research laboratory; and wed Judith Olef last June.

Ed and Doris Baker have a boy, Steven, now two. Ed has served in the Signal Corps and has now finished two years at Harvard Law. . . . Stan Wray and wife are both working at the Northronics division of Northrop Aircraft in California. . . . Jerome Vielehr, in 1959, joined the group with M.B.A.'s from Harvard. . . . Jim Wilson received an M.S. in mechanical engineering from the University of Rochester last June. . . . Richard Srebro received his M.D., cum laude, from Wash-

Sloan Fellows

The 1960 Sloan Fellows spent a profitable week in Washington in late March, meeting with government policy-makers and administrators. They were joined during their luncheon meetings by many of the former Sloans now living in the Washington area, including: *John I. Cumberland, Jr., Edward E. Harriman, Robert L. Kelly, Virgal L. Schad, Jr., Lee C. Tait, Joe C. Jones, and Neal O. Wade, Jr.*

A meeting of the Board of Governors of the Society of Sloan Fellows of M.I.T. was scheduled at M.I.T. on May 18. Nominated for election as new members of the Board were: *W. Endres Bahls, 1941-42, Radio Corporation of America; Dean E. Cogswell, 1950-51, New England Mutual Life Insurance Company; Harrison T. Price, 1954-55, Chevrolet Motor Division's Automatic Transmission Plant; and Victor J. Lombardi, 1957-58, Scott and Williams, Inc.*

Retiring members of the Board this year are: *Russell DeYoung, 1939-40, The Goodyear Tire and Rubber Company; Wayne J. Holman, Jr., 1938-39, Chicopee Manufacturing Corporation; John C. Leslie, 1931-32, Pan American World Airways; and William H. Feathers, 1951-52,*

ington University, St. Louis, last June. . . . Frank Bader has finished his tour in the Air Force and is with the counter-measures division of Sperry Rand in New York. . . . Bill Leitch finished Harvard Business last June, where he was editor of the yearbook, and then joined the staff of *Business Week* and *Factory Management* as an assistant editor.

Last month I mentioned several of our regional information collectors but left out Guy Spencer, 3217 Phoenix Drive, Ft. Worth 16, Texas. We need volunteers for California and New York areas, so write. — *BRUCE B. BREDEHOFT, Secretary, 1528 Dial Court, Springfield, Ill.; M. PHILIP BRYDEN, Assistant Secretary, 3684 McTavish Street, Montreal 2, PQ, Canada.*

'59

Spent another enjoyable weekend in Boston recently. I had a chance to go over to the Phi Delt house where several members of our class were having a little get-together. The biggest news of all came with Glenn Zeiders' engagement announcement. How Glenn ever managed to get as great a girl as Susie Muldowney is really a question. Best of luck to both of them!

June means summer. And for those of us who are still lucky enough to be in school, it means a two-month vacation. I had a very lucky break. I was just offered a job as a recreation director aboard a

National Carbon Company, Division of Union Carbide Corporation.

The new Advisory Council of the School of Industrial Management, with Alfred P. Sloan, Jr., as Chairman, met with Dean Howard W. Johnson on May 4. Two Sloan Fellows—*Wayne J. Holman, Jr.'39* and *Russell DeYoung'40* — are members of the Advisory Council and of the Visiting Committee of the School.

New assignments of Sloan Fellows include the move of *Lee Tait'56*, to the position of Comptroller, The Chesapeake and Potomac Telephone Company of West Virginia, Charleston, W. Va. . . . As of April 1, *Hilmar B. Christianson, Jr.'53*, joined the Public Service Company of Indiana at Kokomo, Ind. . . . *David Christison'58*, is returning from Barrington, R.I., to Buffalo, N.Y., as manager of the Mobil Oil Company, Buffalo Refinery. . . . *Alfred E. Fernald'55*, is now special projects radio engineer at AT&T headquarters in New York City. . . . *Horace S. Ford, Jr.'32*, is sales engineer with Thermo-Fax Sales of Connecticut, Inc. . . . *Vern R. Hatch'54*, AT&T long lines department, has become division plant superintendent at Wayne, Pa.

The death of *Stanley Johnson'58*, American Smelting and Refining Company, in an automobile accident occurred near Durango, Mexico, on March 25. The youngest member of his Sloan group, Stan had made an excellent record and had a bright future. His class hopes to establish, in his memory, a trust fund for his young son's education.—*JOHN M. WYNNE.*

European bound ocean liner. I leave New York the 29th, bound for Rotterdam. Since I'll be gone all summer and well into September, I hope anyone with any news about himself or other class members will send this information to John McElroy, 15 Crocker Street, Rockville Centre, N.Y. This way we can keep '59 represented in all the issues of *The Technology Review*.

Just received a list of '59 members who have been awarded National Science Foundation fellowships for the coming school year at M.I.T. The list includes Donald H. Avery, Carl A. Barlow, Jr., Gilbert Y. Chin, and Stephen D. Rothleder. Congrats to all of you. . . . A double engagement has recently hit the class of '59. Sheila Evans'60 and Bill Widnall recently announced plans for their early summer wedding. Bill is still at Tech where he is a junior staff teacher. I know we all wish Sheila and Bill the very best of everything in the years to come. . . . Don Tyra has just completed his requirements for a master's in science at Ohio State. How 'bout a line letting us know your future plans, Don?

Well, with another graduation soon upon us, we shall no longer hold the esteemed last page in *The Review*. And if you all don't start writing more often, we may not hold any page. So, please drop John or myself a line during the summer. Have a good summer, all.—*ROBERT A. MUH, Secretary, 8 Merrivale Road, Great Neck, N.Y.*



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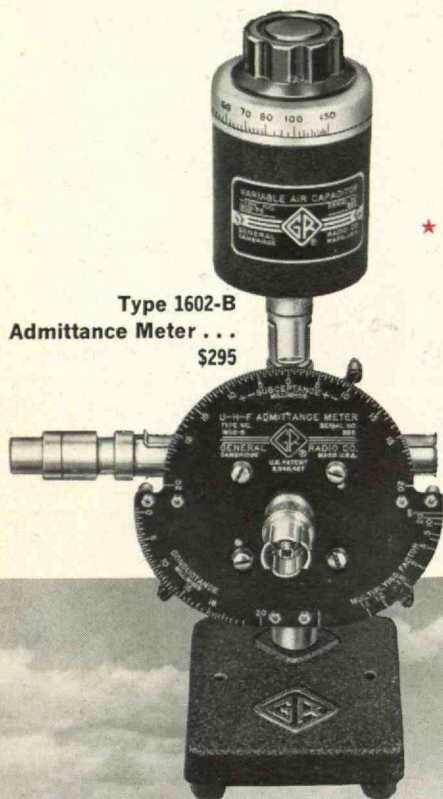
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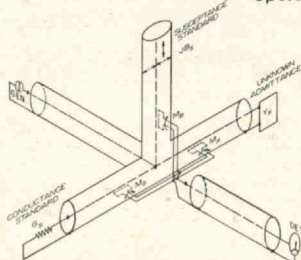
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